ORDER NO. SD7906-1578

Service Manual

Turntable System
SL-Q3
(XA), (XAL), (XGE), (E),
(XG), (XGF), (XGB)

SL-Q3K
(E), (XG)

- The model SL-Q3(XA) is available in Asia, Latin America, Middle East and Africa only.
- The model SL-Q3(XAL) is available in Australia only.
- The model SL-Q3(XGE) is available in United Kingdom only.
- The models SL-Q3 (E) and SL-Q3K (E) are available in Scandinavia only.
- The models SL-Q3 (XG) and SL-Q3K (XG) are available in European only.
- The model SL-Q3(XGF) is available in France only.
- The model SL-Q3(XGB) is available in Belgium only.

SPECIFICATIONS (Specifications are subject to change without notice.)

General

Power supply:	~110-120/220-240V, 50 or 60 Hz
Power consumption:	7.5 W
Dimensions: (W x H x D)	43.0 x 13.0 x 37.5 cm (16-59/64" x 5-7/64" x 14-49/64")
Weight:	7.1 kg (15.7 lb.)

Turntable section

Type:	Automatic turntable Auto start Atuo return Auto stop Repeat play
Drive method:	Direct drive
Motor:	Brushless DC motor
Turntable platter:	Aluminum die-cast Diameter 31.2 cm (12-9/32 inches)
Turntable speeds:	33-1/3 rpm and 45 rpm
Starting torque:	1 kg·cm (0.87 lb·in)
Build-up characteristics:	0.9 s. from standstill to 33-1/3 rpm
Speed change due to load torque:	0% within 0.7 kg·cm (0.61 lb·in)
Speed drift:	Within ±0.002%
Wow and flutter:	0.012% WRMS* 0.025% WRMS (JIS C5521) ±0.035% peak (IEC 98A Weighted)

* This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from built-in frequency generator of motor assembly.

Rumble:	−56 dB (IEC 98A Unweighted) −78 dB (IEC 98A Weighted)

Tonearm section

Type:	Universal tonearm
Effective length:	230 mm (9-1/16")
Overhang	15 mm (19/32")
Friction:	Less than 7 mg (lateral, vertical)
Effective mass:	12 g (without cartridge)
Tracking error angle:	Within 2°32′ at the outer groove of 30 cm (12") record Within 0°32′ at the inner groove of 30 cm (12") record
Offset angle:	22°
Stylus pressure adjustment range:	0 – 2.5 g
Applicable cartridge weight range:	6 – 9.5 g 13.5 – 17 g (including headshell)
(with shellweight)	3 – 6.5 g 10.5 – 14 g (including headshell)
Headshell weight:	7.5 g

Cartridge section

Model No.	EPC-207C
Type:	Moving magnet
Frequency response:	20 Hz to 25 kHz 20 Hz to 15 kHz ±2 dB
Output voltage:	3 mV at 1 kHz 5 cm/s. zero to peak lateral velocity [8.5 mV at 1 kHz 10 cm/s. zero to peak 45° velocity (DIN 45500)]
Channel separation:	25 dB at 1 kHz
Channel balance:	Within 2 dB at 1 kHz
Compliance (dynamic):	10 x 10^{-6} cm/dyne at 100 Hz
Stylus pressure:	1.75 ±0.25 g (17.5 ±2.5 mN)
Load impedance:	47 kΩ to 100 kΩ
Weight:	5.6 g (cartridge only)
Replacement stylus:	EPS-207ED (Elliptical stylus)

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

TECHNISCHE DATEN (Änderungen der technischen Daten vorbehalten.)

Allgemeine Daten

Stromversorgung:	~ 110-120/220-240V, 50/60 Hz
Leistungsaufnahme:	7,5 W
Abmessungen (B x H x T):	43,0 x 13,0 x 37.5 cm
Gewicht:	7,1 kg

Plattenspieler

Typ:	Automatischer Plattenspieler Startautomatik Rückführautomatik Stopautomatik Wiederhol-Betrieb
Antrieb:	Direktantrieb
Motor:	Kollektorloser Gleichstrommotor
Plattenteller:	Aluminium-Spritzguß Durchmesser 31,2 cm
Plattenteller-Drehzahlen:	33-1/3 und 45 U/min
Anlaufdrehmoment:	1 kg·cm
Drehzahl-Hochlaufzeit:	0,9 s. vom Stillstand auf 33-1/3 U/min
Drehzahl-Abweichung aufgrund von Lastschwankungen:	0% innerhalb 0,7 kg.cm
Drehzahl-Abweichung:	Innerhalb ± 0,002%
Gleichlaufschwankungen:	0.012% WRMS* 0,025% WRMS (JIS C5521) ±0,035% Spitze (IEC 98A bewertet)

*Diese Nennleistung bezieht sich auf das Laufwerk-Bauteil allein ausschließlich Einflüsse von Schallplatte, Tonabnehmer oder Tonarm aber einschließlich Plattenteller Gemessen anhand von Signalen vom eingebauten Frequenzgenerator des Motorbauteils.

Rumpel-Geräusch-spannungsabstand:	–56 dB (IEC 98A unbewertet)
Rumpel-Fremd-spannungsabstand:	–78 dB (IEC 98A bewertet)

Tonarm

Typ:	Universal Tonarm
Effektive Länge:	230 mm
Überhang:	15 mm
Lagerreibung:	Weniger als 7mg (horizontal, vertikal)
Effektive Masse:	12 g (ohen Tonabnehmer)
Spurfehlwinkel:	2° 32 bei der Einlaufrille einer 30 cm-Platte 0° 32' bei der Auslaufrille einer 30 cm-Platte
Kröpfungswinkel:	22°
Auflagekraft-Einstellbereich:	0 – 2,5 g
Zulässiger Tonabnehmer-Gewichtbereich:	6 – 9,5 g 13,5 – 17 g (einschließlich Tonarmkopf)
(mit Zusatzgewicht)	3 – 6,5 g 10,5 – 14 g (einschließlich Tonarmkopf)
Tonarmkopf-Gewicht:	7,5 g

Tonabnehmer

Modell-Nummer:	EPC-207C
Typ:	Magnetischer Tonabnehmer
Frequenzgang:	20 Hz bis 25 kHz 20 Hz bis 15 kHz ±2 dB
Ausgangsspannung:	3 mV bei 1 kHz 5 cm/s. Null-zu-Spitze, lateral [8,5 mV bei 1 kHz 10 cm/s. Null-zu-Spitze, 45° (DIN 45500)]
Kanaltrennung:	25 dB bei 1 kHz
Kanalabweichung:	Innerhalb 2 dB bei 1 kHz
Nachgiebigkeit (dynamisch):	10×10^{-6} cm/dyn bei 100 Hz
Auflagekraft:	1,75 ±0,25 g (17,5 ±2,5 mN)
Impedanz:	47 kΩ bis 100 kΩ
Gewicht:	5,6 g (ohne Tonarmkopf)
Ersatznadel:	EPS-207ED (Elliptische Nadel)

SPECIFICATIONS (Les spécifications sont susceptibles d'être modifiées sans préavis.)

Généralités

Alimentation:	~110-120/220-240V, 50 ou 60 Hz
Consommation:	7,5 W
Dimensions: (L H P)	43,0 x 13,0 x 37,5 cm
Poids:	7,1 kg

Platine de lecture

Type:	Platine automatique Démarrage automatique Retour automatique Arrêt automatique Audition répétée
Système d'entrainement:	Entraînement direct
Moteur:	Moteur C.C. sans balai
Plateau de lecture:	Aluminium moulé sous pression Diamètre 31,2 cm
Vitesses de rotation:	33-1/3 et 45 t/p.m
Couple de démarrage:	1 kg·cm
Caractéristiques d'augmentation:	0,9 s. de l'arrêt à 33-1/3 t/p.m.
Variation de vitesse due au couple de charge:	0% en deçà de 0,7 kg·cm
Déviation du nombre de tours:	En deçá de ±0,002%
Pleurage et scintillement:	0,012% WRMS* 0,025% de valeur efficace (JIS C5521) ±0,035% de crête (IEC 98A Pondéré)

*Ce régime nominal se rapporte a l'ensemble du tournedisque seul excluant les effets du disque, de la cellule pickup ou du bras de lecture, mais comprenant le plateau. Mesuré par l'obtention d'un signal provenant du générateur de fréquences incorporé de l'ensemble du moteur.

Ronflement:	–56 dB (IEC 98A Non pondéré) –78 dB (IEC 98A Pondéré)

Bras de lecture

Type:	Bras de lecture universel
Longueur effective:	230 mm
Porte-à-faux:	15 mm
Frottement:	Moins de 7 mg (latéral et vertical)
Masse réelle:	12 g (sans la cellule pick-up)
Angle d'erreur de piste:	En deçà de 2°32 au sillon extérieur d'un disque de 30 cm En deçà de 0°32' au sillon intérieur d'un disque de 30cm
Angle de décalage:	22°
Plage de réglage de la pression d'appui:	0 – 2,5 g
Gamme du poids de la cellule pick-up utilisable:	6 – 9,5 g 13,5 – 17 g (y compris la coque porte-cellule)
(avec contrepoids de la cellule)	3 – 6,5 g 10,5 – 14 g (y compris la coque porte-cellule)
Poids de la cellule:	7,5 g

Cellule pick-up

No. du modèle:	EPC-207C
Type:	Aimant mobile
Réponse en fréquence:	20 Hz à 25 kHz 20 Hz à 15 kHz ±2 dB
Tension de sortie:	3 mV à 1 kHz; 5 cm/s. zéro à vitesse latérale de crête (8,5 mV à 1 KHz 10. cm/s., zéro à vitesse 45° de crête [DIN 45500])
Séparation de canal:	25 dB a 1 kHz
Equilibrage des canaux:	En deçà de 2 dB à 1 kHz
Elasticité (dynamique):	10×10^{-6} cm/dyne à 100 Hz
Pression de la pointe de lecture:	1,75 ± 0,25 g (17,5 ±2.5 mN)
Impédance de charge:	47 kΩ to 100 kΩ
Poids:	5,6 grammes (cellule seule)
Pointe de lecture de remplacement:	EPS-207ED (Forme elliptique)

■ CONTENTS

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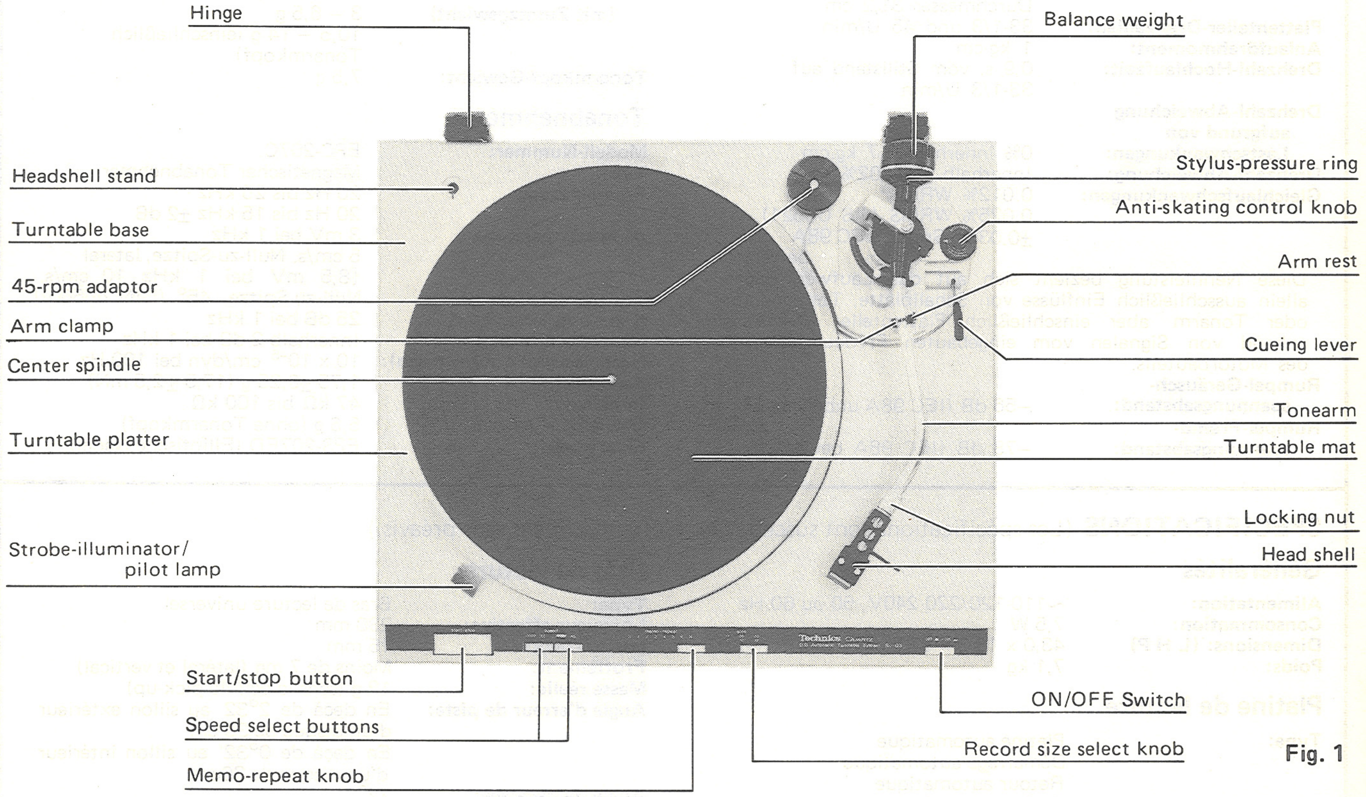
■ PARTS IDENTIFICATION



Hinge
Balance weight
Headshell stand
Stylus-pressure ring
Turntable base
Anti-skating control knob
Arm rest
45-rpm adaptor
Arm clamp
Cueing lever
Center spindle
Tonearm
Turntable platter
Turntable mat
Locking nut
Head shell
Strobe-illuminator/
pilot lamp
Start/stop button
ON/OFF Switch
Speed select buttons
Record size select knob
Memo-repeat knob
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Fig. 1

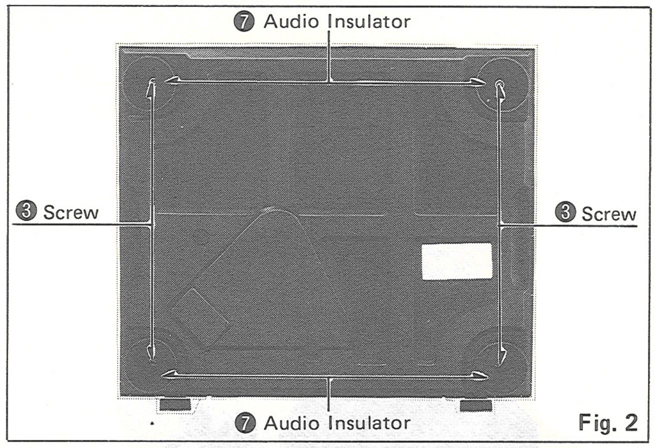
■ FEATURES

- Front panel controls provide exceptional convenience
- Quartz-phase-locked direct drive plus full cycle F·G (Frequency Generator) and integral rotor-platter motor
- Precision aluminum diecase turntable base unique to Technics is used.
- "TNRC"* base material provides an acoustic shield
  *"TNRC" .... Technics Non-Resonance Compound
- Smooth braking is achieved with the fully electronic system, which also makes possible almost instantaneous speed change.
- Low-mass, low-friction gimbal suspension tonearm
- Viscous-damped cueing
- Anti-skating control
- Hinged, detachable dust cover
- Auto-start, auto-stop, auto-return and programmable repeat play make the SL-Q3 a Pleasure to use.
  Since everything is automatic, you don't need to touch the tonearm unless you want to move to a particular cut on the record.
  The "memo-repeat" feature allows you to repeat a record up to six times, or indenfinitely if you prefer, you can operate the SL-Q3 as a manual turntable, using the cueing control.

■ DISASSEMBLY PROCEDURE

How to remove bottom board

1. Remove head shell and turntable.
2. Secure arm with arm clamp.
3. Turn the set upside-down taking care not to damage dust cover.
4. Remove 4 setscrews ③ . (See Fig. 2)



⑦ Audio Insulator
③ Screw
③ Screw
⑦ Audio Insulator

Fig. 2

How to remove stater frame ass'y and FG detector coil ass'y

1. Remove the bottom board.
2. Remove 7 setscrews ②, ⑨ of the drive P.C.B. and auto mechanism ass'y. (See Fig. 3)
3. Remove 3 setscrews ⑪ of the stater frame cover, (See Fig. 4)
4. Remove soldering at each coil of the stater frame. (See Fig. 5)

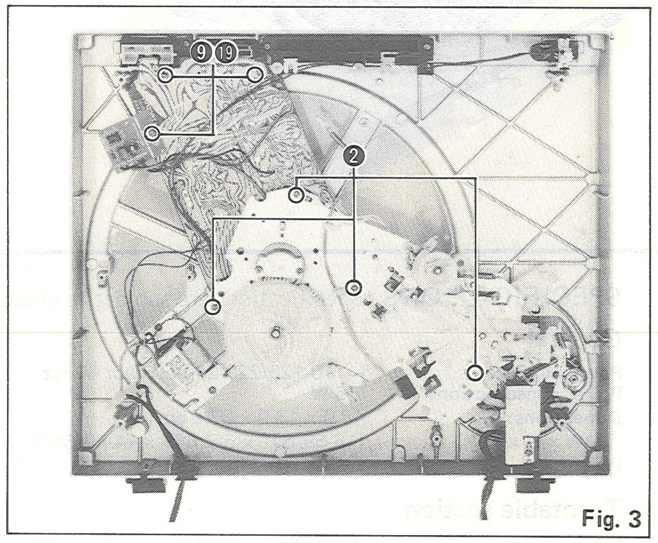


Fig. 3

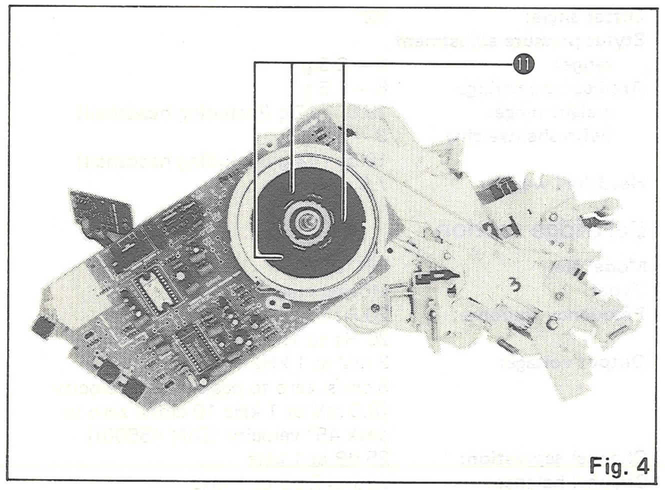
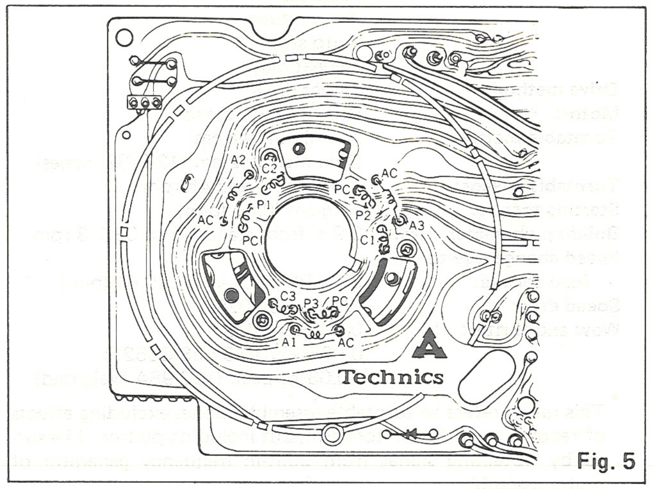


Fig. 4

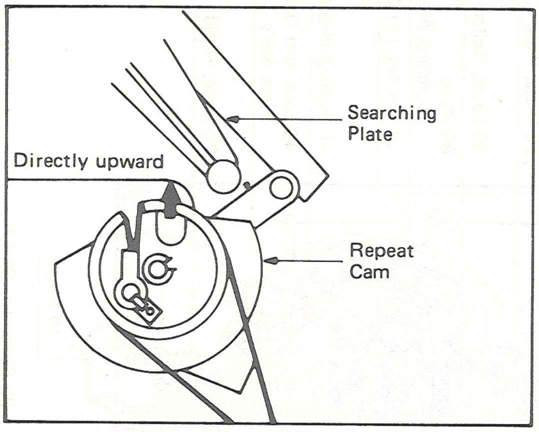


A2
C2
AC
PC
P1
P2
AC
A3
C1
PC1
C3
P3
PC
A1
AC
Technics

Fig. 5

Remarks:
For the disassembly of parts ather then the above, refer to the parts arrangement and development diagrams provided in this manual.

■ DIAL DRIVE MECHANISM DIAGRAM


Searching Plate
Directly upward
Repeat Cam

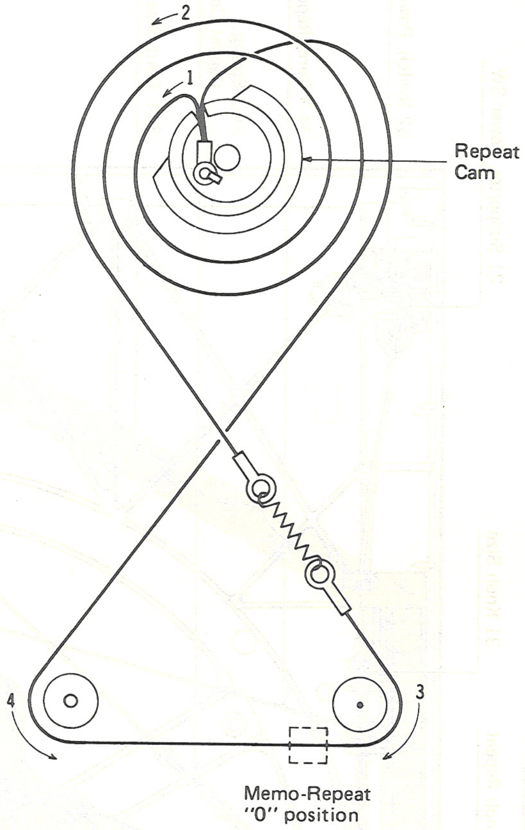

2
1
Repeat Cam
4
3
Memo-Repeat "0" position

Fig. 6

Set the cord according to following procedure.

1. Link the hook of the cord onto the projection of the cam.
2. Hold the spring-attached side of the cord with the right hand, and wind it around the repeat cam twice, and then set the cord in accordance with steps 1 – 4.
3. Adjust so that the repeat cam and searching plate are positioned as illustrated. Set the memo-repeat knob to the "0" position and secure it there.

Adjustment of overhang (See Fig. 7.)

1. Insert the headshell into the gauge.
2. Loosen the mounting screws and move the cartridge forward or backward until the stylus tip lines up with the edge of the gauge.
3. Tighten the mounting screws without moving the cartridge.

Note:

Your cartridge is now adjusted for lowest tracking error and minimum distortion.

This gauge is exclusively designed for this tonearm.

Lubrication (See Fig. 8.)

Apply 2 or 3 drops of oil once after every 2000 hours of operation.

The time interval is much longer than that for conventional type motors (200~500 hours).

Please purchase original oil. **(Part number is SFWO 010.)**

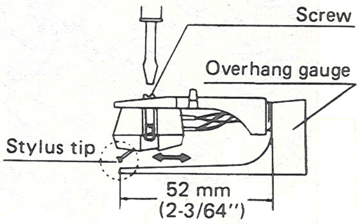

Screw
Overhang gauge
Stylus tip
52 mm
(2-3/64")

Fig. 7

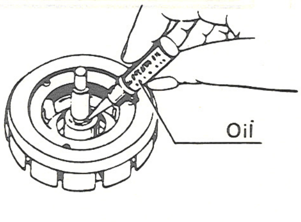


Fig. 8

■ PARTS ARRANGEMENT DIAGRAM

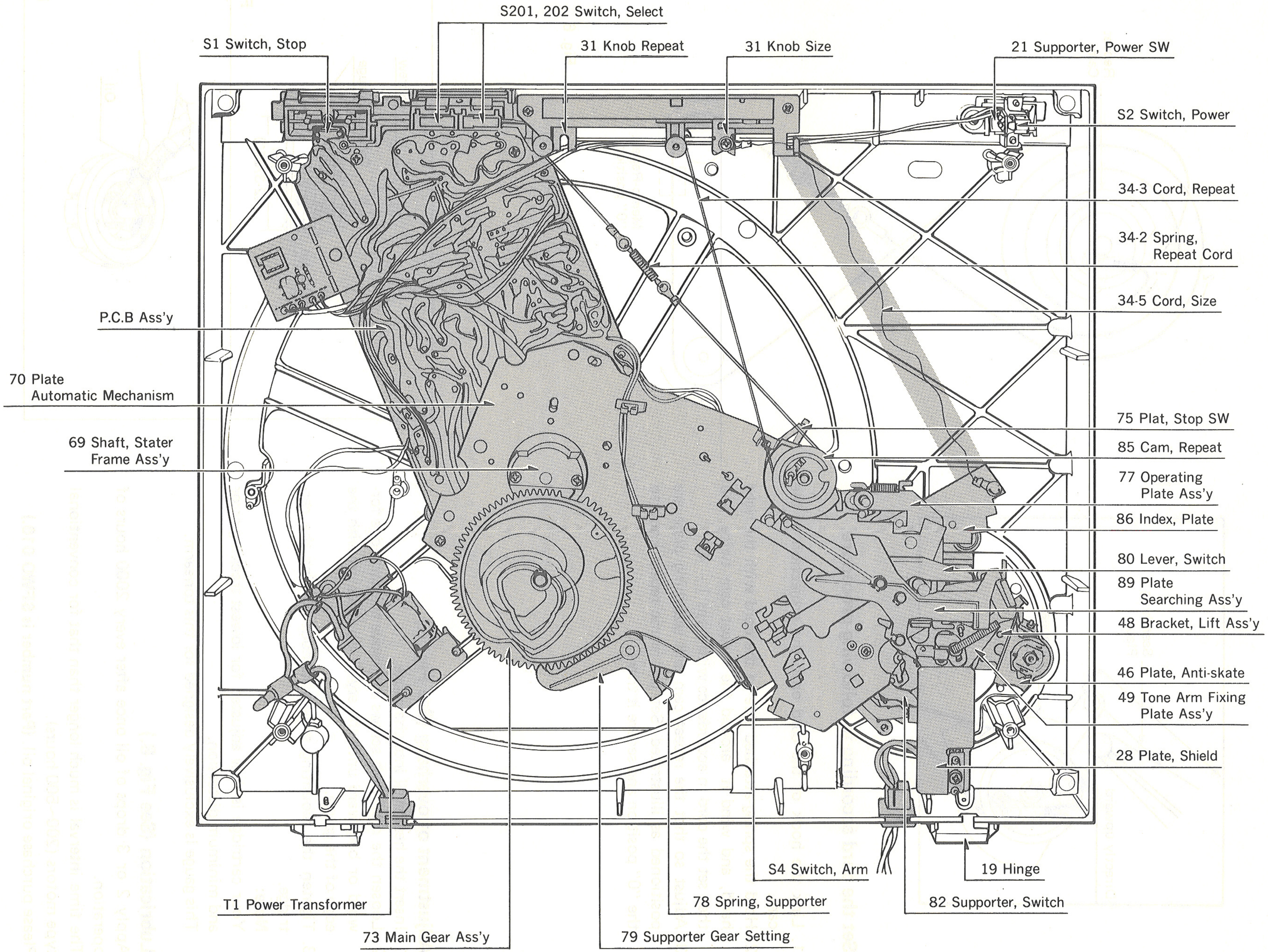

S201, 202 Switch, Select
S1 Switch, Stop
31 Knob Repeat
31 Knob Size
21 Supporter, Power SW
S2 Switch, Power
34-3 Cord, Repeat
34-2 Spring, Repeat Cord
34-5 Cord, Size
P.C.B Ass'y
70 Plate Automatic Mechanism
69 Shaft, Stater Frame Ass'y
75 Plat, Stop SW
85 Cam, Repeat
77 Operating Plate Ass'y
86 Index, Plate
80 Lever, Switch
89 Plate Searching Ass'y
48 Bracket, Lift Ass'y
46 Plate, Anti-skate
49 Tone Arm Fixing Plate Ass'y
28 Plate, Shield
S4 Switch, Arm
19 Hinge
T1 Power Transformer
78 Spring, Supporter
82 Supporter, Switch
73 Main Gear Ass'y
79 Supporter Gear Setting

Fig. 9

HOW TO OPERATE

- **Manual play of record**
  1. Place a record on the turntable mat.
  2. Set the on/off switch to the "**on**" position (▬). **(See Fig. 10.)**
     Both the LED at the speed select button 33 (33-1/3 rpm) and the strobe-illuminator should be illuminated.
     Note:
     Since the unit has been designed to select 33-1/3 rpm automatically each time you push the on/off switch to "**on**", push the 45 rpm speed select button if you play a 45-rpm record. **(See Fig. 11)**
  3. Remove the stylus protector, if your cartridge has a detachable one.
  4. Release the arm clamp.
  5. Set the cueing lever to the up position. **(See Fig. 12.)**
  6. Move the tonearm over the desired groove.
     The turntable platter will start to rotate.
  7. Set the cueing lever to the down position. **(See Fig. 13.)**
     The tonearm will descend slowly onto the record and play will begin.
  8. When play is finished, the tonearm will automatically return to the arm rest (auto-return), and the turntable platter will stop rotation.
     If the unit is not to be used for some time set the on/off switch to the "**off**" position.
     Attach the stylus protector, if you have one, to guard the stylus tip from damage.

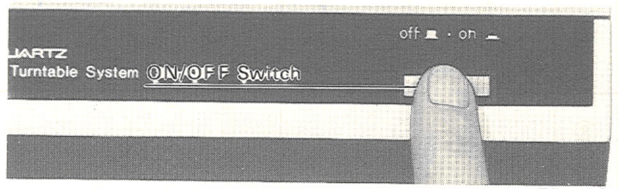


Fig. 10

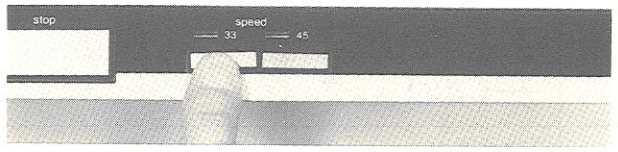


Fig. 11

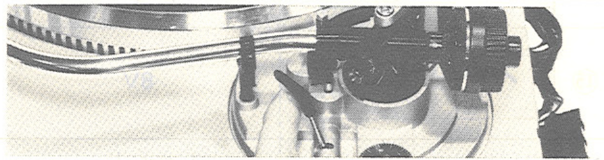


Fig. 12

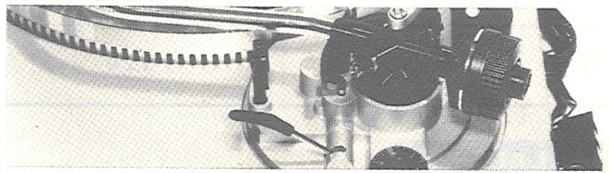


Fig. 13

- **Automatic play**
  1. Set the speed select button in the same manner as in manual play and release the arm clamp.
  2. Set the record size select knob to the diameter of the record (7" [17 cm], 10" [25 cm], or 12" [30 cm] you wish to play. **(See Fig. 14.)**
  3. Push the start/stop button. **(See Fig. 15.)**
     Note:
     The tonearm will move automatically over the lead-in groove and descend slowly onto the record (auto-start). Play will begin.
  4. When play has finished, the tonwarm will automatically return to the arm rest (auto-return).

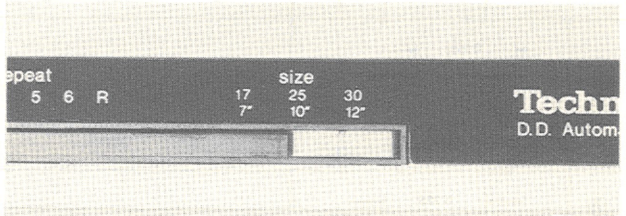


Fig. 14

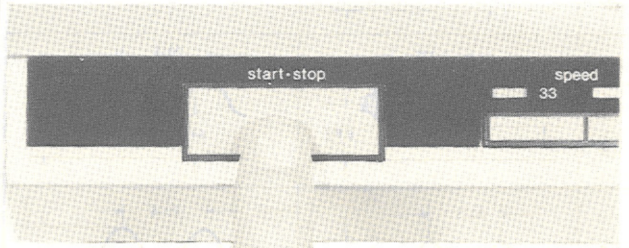


Fig. 15

- **Repeat play of a record**
  1. Set the "**memo-repeat**" knob to the desired number of times you wish to play.
     "**R**" position enables you to repeat play continuously. **(See Fig. 16.)**
     Note:
     The "**memo-repeat**" Knob may be set to a desired number, except during automatic start or automatic return cycel.
     If you start play manually while the "**memo-repeat**" knob is set to a number, there will be an additional repeat play.
  2. Start play in the same way as for automatic play.
- **How to stop play**
  Push the start/stop button.
  The tonearm automatically returns to the arm rest, and the turntable stops rotating.

  Note:
  Before you operate the start/stop button, make sure that the "**memo-repeat**" knob is set at the "**0**" position.
  If this knob is set at any position other than "**0**", the repeat play is continued by the number of times indicated, even if you push the start/stop button.
- **How to suspend play**
  Set the cueing lever to the "**up**" position.
  The stylus tip of the cartridge will be lifted from the record.
- **When you play a 45-rpm record with a large center hole**
  Place the 45-rpm adaptor on the center spindle. Set the speed select button to the "**45**" position.

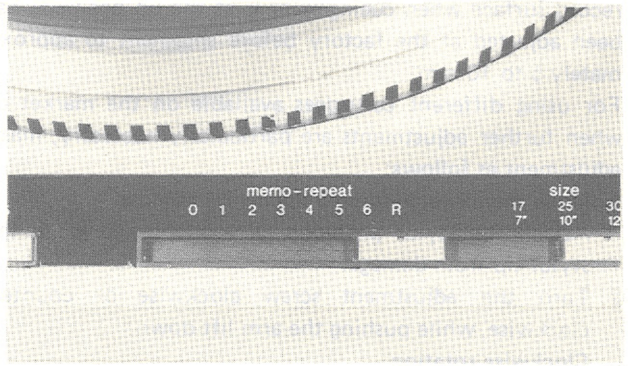


Fig. 16

NOTE:

ADJUSTMENTS

Adjustment of arm-lift height (See Figs. 17 and 18.)

The arm-lift height (distance between the stylus tip and record surface when cueing lever is at the up position) has been adjusted at the factory before shipment to approximately 5 to 10 mm.

For using different cartridges available on the market or when further adjustments are particularly necessary, make adjustment as follows:

1. Move the tonearm toward the center spindle.
   Attach the stylus protector, if available, to guard the stylus tip from damage.
2. Turn the adjustment screw clockwise or counterclockwise, while pushing the arm lift down.
   Clockwise rotation
   –distance between the record and stylus tip is reduced.
   Counterclockwise rotation
   –distance between the record and stylus tip is increased.
   Note:
   As the adjusting screw has a hexagonal head, be sure to make the adjustment while depressing the arm lift, or the screw will not move freely.
   Also be sure that the hexagonal head retracts correctly into the arm lift when the latter is released.

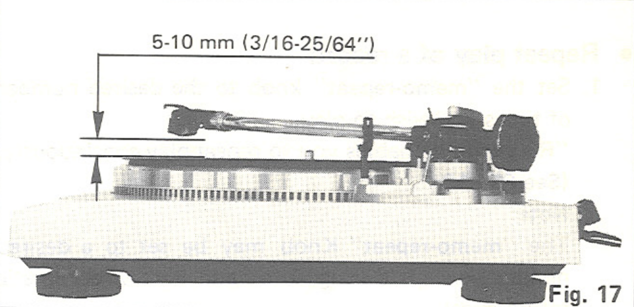

5-10 mm (3/16-25/64")

Fig. 17

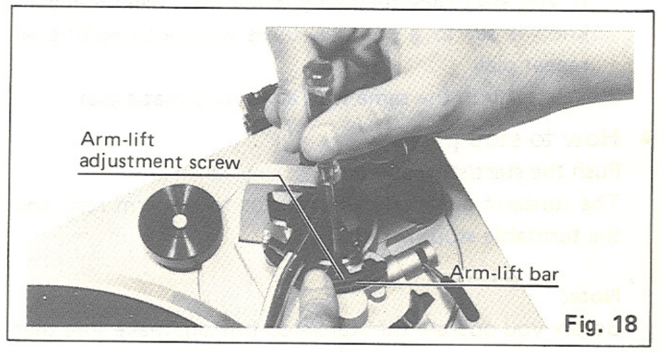

Arm-lift
adjustment screw
Arm-lift bar

Fig. 18

Adjustment for automatic start position (See Fig. 19.)

(Remove the rubber cap.)

In cases where the stylus tip sets down outside of the record
–Rotate clockwise.

In cases where the stylus tip sets down too far in the recorded groove
–rotate counterclockwise.

Adjustment for automatic return position (See Fig. 19.)

(Remove the turntable mat.)

In cases where the tonearm tends to return before the playing has finished.
–rotate clockwise.

In cases where the tonearm fails to return after the last-groove of the record has been played.
–rotate counterclockwise.

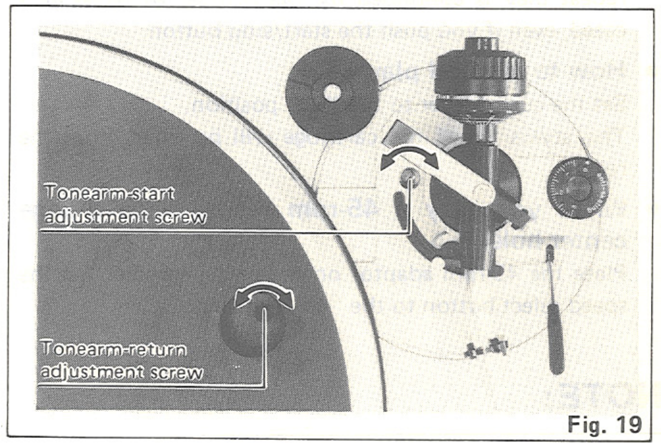
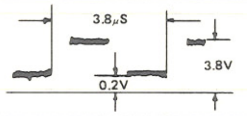
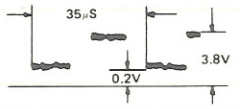
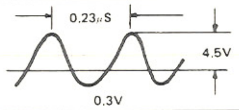
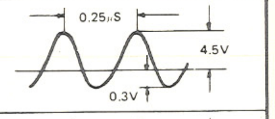
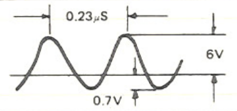
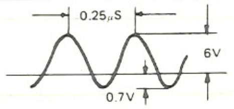

Tonearm-start
adjustment screw
Tonearm-return
adjustment screw

Fig. 19

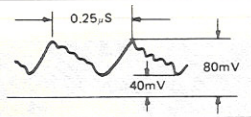
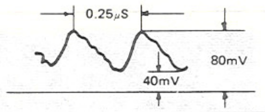
REFERENCE VOLTAGE AND WAVEFORM AT EACH IC PIN AND TEST POINT

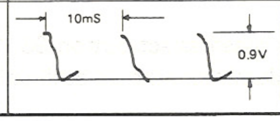
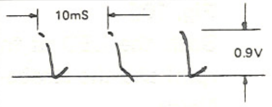
IC201 AN6680

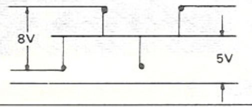
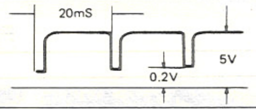
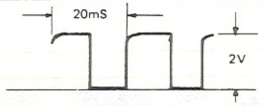
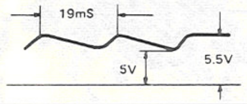
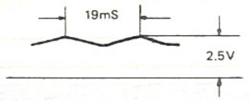
	START	STOP
①	2.5V	2.5V
② ③	 3.8μS 0.2V 3.8V	 35μS 0.2V 3.8V

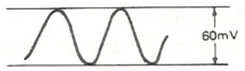
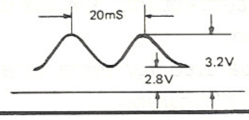
④	 0.23μS 4.5V 0.3V	 0.25μS 4.5V 0.3V
⑤	 0.23μS 6V 0.7V	 0.25μS 6V 0.7V
⑥	3.5V	3.5V

IC201 AN6680

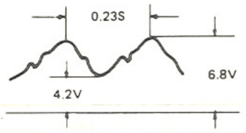
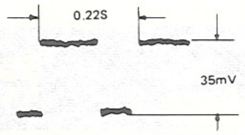
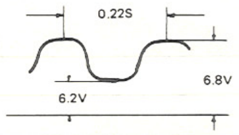
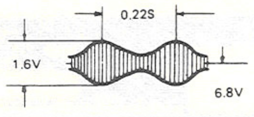
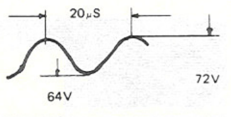
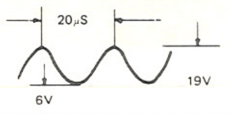
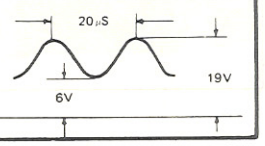
	START	STOP
⑦	 0.25μS 80mV 40mV	 0.25μS 80mV 40mV
⑧ ⑫	0V	0V

⑨	10.2V	10.2V
⑩	9.0V	9.0V
⑪		

	START	STOP
⑬		0.2V
⑭		
⑮		8V
⑯	5.2V	
⑰	5.2V	5.2V

	START	STOP
⑱		2.4V
⑲	7V	0V
⑳	0.4V	6.2V
㉑	1.8V	0.2V
㉒ ㉔	3V	3.2V
㉓	 20mS 3.2V 2.8V	3.2V

IC101 AN6675

	START	STOP
① ② ㉔	 0.23S 6.8V 4.2V	0.2V
⑨		0V
⑩ ⑫ ④	 0.22S 6.8V 6.2V	2.5V
⑪ ⑬ ⑮	 0.22S 1.6V 6.8V	 20μS 72V 64V
⑱		

	START	STOP
③ ⑦ ⑯	0V	0V
④	2.8V	0.2V
⑤ ⑧	5.2V	5V
⑥	5.2V	6.8V
⑰	6.8V	6.8V
⑲ ⑳ ㉑ ㉓	12V	12V
㉒	2V	0.2V

■ JUSTIERUNGEN

Justierung der Tonarmlifthöhe (Vgl. Abb. 25 und 26.)

Die Tonarmlifthöhe, d.h. der Abstand zwischen Nadelspitze und Schallplattenoberfläche bei angehobenem Lift-Hebel, ist werkseitig auf 5 — 10 mm eingestellt worden.

Wenn Sie einen anderen Tonabnehmertyp verwenden, oder, wenn weitere Justierungen unbedingt notig sind, nehmen Sie die Justierungen auf folgende Weise vor:

1. Schwenken Sie den Tonarm gegen die Plattentellerachse.
   Setzen Sie den Nadelschutz auf, damit die Nadelspitze vor Beschädigung geschützt wird.
2. Drehen Sie die Justierschraube im Uhrzeiger- oder Gegenuhrzeigersinn, während Sie die Tonarmliftführung nach unten drücken.
   Drehung im Uhrzeigersinn
   —Der Abstand wird kleiner
   Drehung im Gegenuhrzeigersinn
   —Der Abstand wird größer
   Anmerkung:
   Da die Justierschraube einen Sechskantkopf hat, muß die Tonarmliftführung während des Justierens unbedingt gedrückt gehalten werden, damit sich die Schraube leicht drehen läßt.

Justierung des Tonarmaufsetzpunktes der Automatik (Vgl. Abb. 27.)

(Die Gummikappe abnehmen)

Falls der Aufsetzpunkt außerhalb der Platte liegt.

—Im Uhrzeigersinn drehen.

Falls der Aufsetzpunkt im Wiedergabeteil der Schallplatte liegt.

—Im Gegenuhrzeigersinn drehen.

Justierung des Abschaltpunktes der Automatik (Vgl. Abb. 27.)

(Die Plattentellerauflage abnehmen.)

Falls der Tonarm zu früh zurückkehrt.

—Im Uhrzeigersinn drehen.

Falls der Tonarm nach Erreichen der Auslaufrille nicht zurückkehrt.

—Im Gegenuhrzeigersinn drehen.

■ REGLAGES

Mise au point de la hauteur de l'élévateur du bras (Voir Fig.s 25 et 26.)

La hauteur de l'élévateur du bras (distance entre l'extrémité de la pointe de lecture et la surface du disque, lorsque le levier de pose et de relevage du bras est à la position vers le haut) a été réglée en usine avant son départ sur approximativement 5 à 10 mm.

Pour l'utilisation des diverses cellules pick-up disponibles sur le marché ou lorsque des mises au point ultérieures sont particulièrement nécessaires, faire les réglages d'après ce qui suit:

1. Deplacer le bras de lecture vers le pivot central.
   Fixer le capot protecteur de la pointe de lecture, s'il en existe un, pour protéger l'extremité de la-pointe d'une éventuelle détérioration.
2. Tourner la vis de réglage dans le sens des aiguilles d'une montre ou dans le sens inverse, tout en abaissant l'élévateur du bras.
   Rotation dans le sens des aiguilles d'une montre.
   —La distance entre la surface du disque et l'extrémité de la pointe de lecture diminue.
   Rotation dans le sens contraire des aiguilles d'une montre.
   —La distance entre la surface du disque et l'extrémité de a pointe de lecture augmente.

   Nota:
   Comme la vis de réglage possède une tête hexagonale, s'assurer d'effectuer la mise au point tout en abaissant l'élévateur du bras, sinon la vis ne bougera pas librement.

Mise au point pour une position de marche automatique. (Voir Fig. 27.)

(Retirer le capuchon en caoutchouc.)

Dans le cas où la tête de la pointe de lecture s'abaisse en dehors du disque.

—Déplacer dans le sens des aiguilles d'une montre.

Dans le cas où la tête de la pointe de lecture s'abaisse trop loin du sillon enregistré.

—Déplacer dans le sens contraire des aiguilles d'une montre.

Mise au point pour une position de retour automatique (Voir Fig. 27.)

(Retirer le tapis du plateau de lecture.)

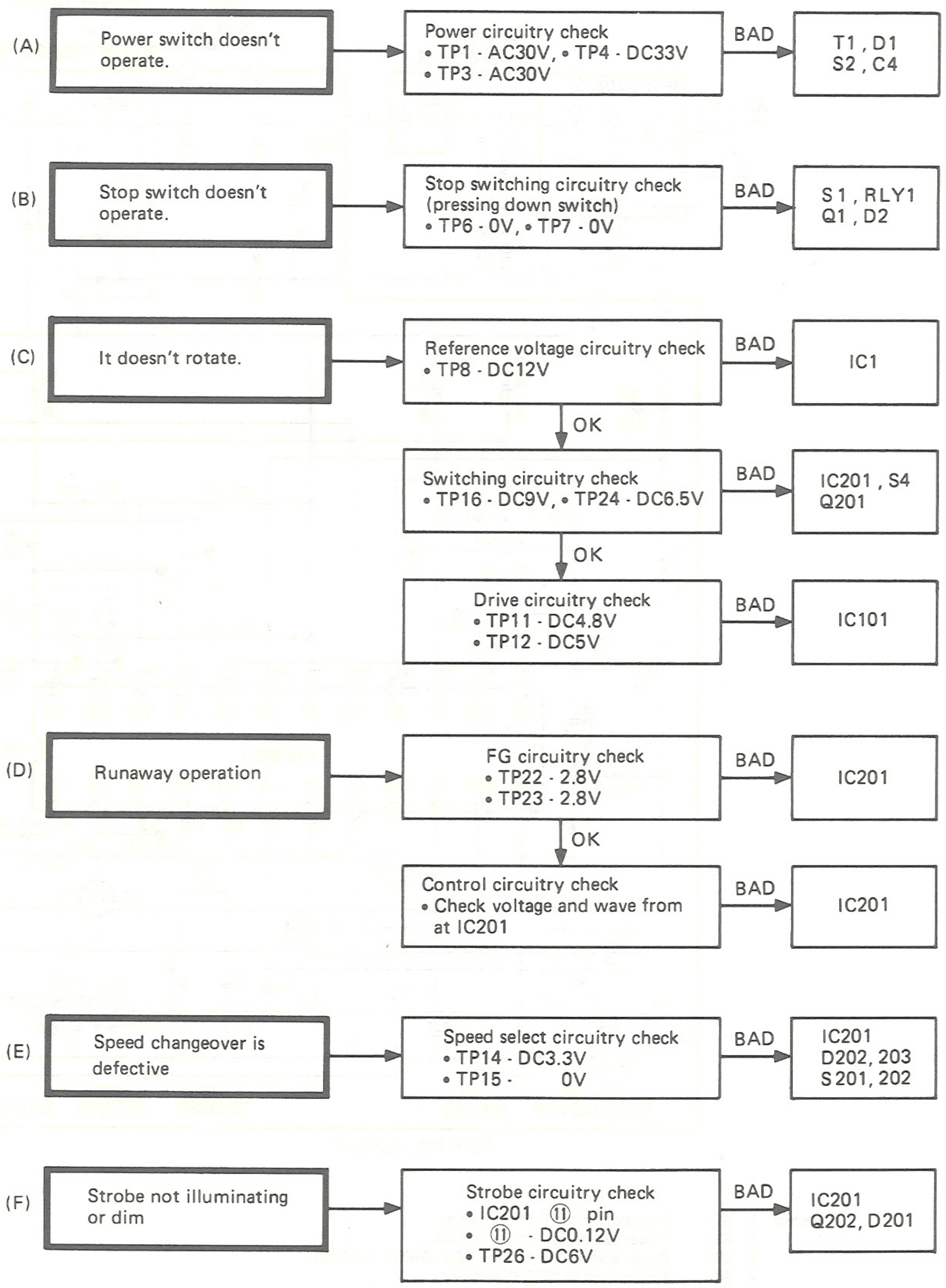
Dans le cas où le bras de lecture tend à revenir avant que l'audition ne soit terminée.

—Déplacer dans le sens des aiguilles d'une montre.

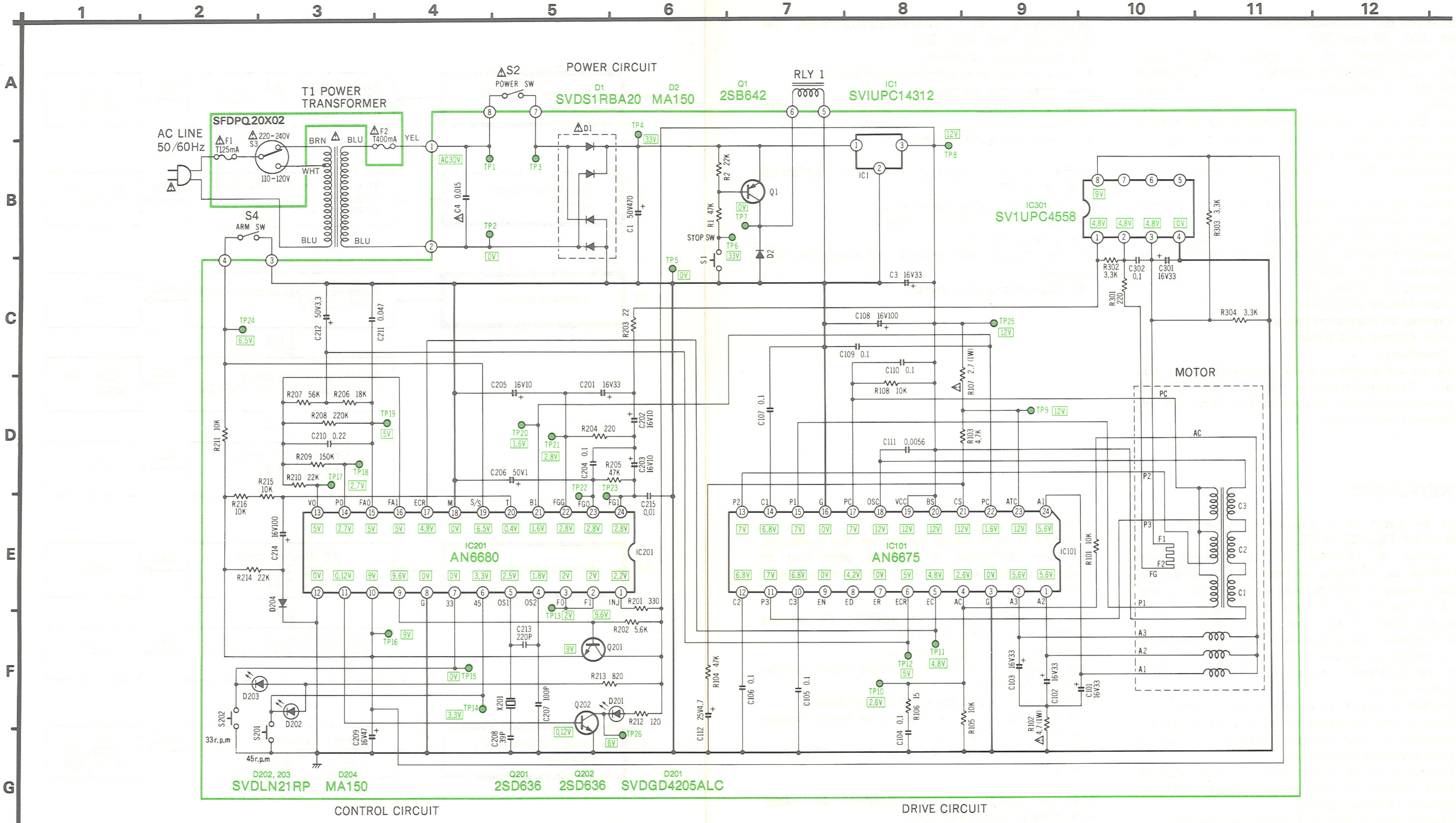
Dans le cas ou le bras de lecture ne peut revenir en arrière après que le dernier sillon du disque ait été joué.

—Déplacer dans le sens contraire des aiguilles d'une montre.

■ TROUBLE SHOOTING


(A)
Power switch doesn't operate.
Power circuitry check
• TP1 - AC30V, • TP4 - DC33V
• TP3 - AC30V
BAD
T1, D1
S2, C4
(B)
Stop switch doesn't operate.
Stop switching circuitry check
(pressing down switch)
• TP6 - 0V, • TP7 - 0V
BAD
S1, RLY1
Q1, D2
(C)
It doesn't rotate.
Reference voltage circuitry check
• TP8 - DC12V
BAD
IC1
OK
Switching circuitry check
• TP16 - DC9V, • TP24 - DC6.5V
BAD
IC201, S4
Q201
OK
Drive circuitry check
• TP11 - DC4.8V
• TP12 - DC5V
BAD
IC101
(D)
Runaway operation
FG circuitry check
• TP22 - 2.8V
• TP23 - 2.8V
BAD
IC201
OK
Control circuitry check
• Check voltage and wave from at IC201
BAD
IC201
(E)
Speed changeover is defective
Speed select circuitry check
• TP14 - DC3.3V
• TP15 - 0V
BAD
IC201
D202, 203
S201, 202
(F)
Strobe not illuminating or dim
Strobe circuitry check
• IC201 ⑪ pin
• ⑪ - DC0.12V
• TP26 - DC6V
BAD
IC201
Q202, D201

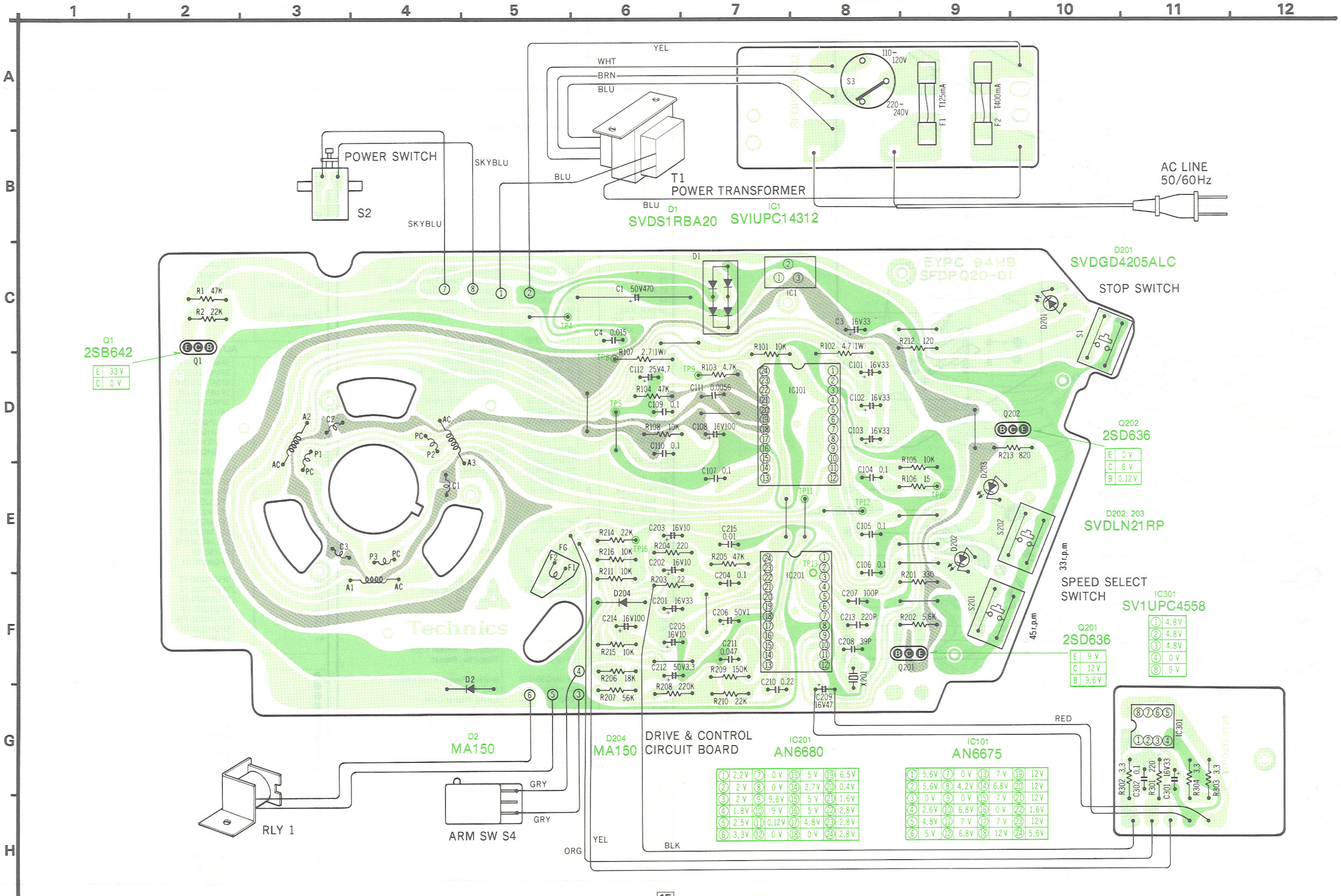
Schematic Diagram (This schematic diagram may be at any time with the development of new technology.)


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
AC LINE 50/60Hz
T1 POWER TRANSFORMER
SFDPQ20X02
F1 T125mA
S3 220-240V 110-120V
BRN
BLU
WHT
F2 T400mA
YEL
S4 ARM SW
S2 POWER SW
POWER CIRCUIT
D1 SVDS1RBA20
D2 MA150
Q1 2SB642
RLY 1
IC1 SVIUPC14312
IC301 SV1UPC4558
AC30V
33V
12V
STOP SW
C1 50V470
C4 0.015
R1 47K
R2 22K
C3 16V33
R302 3.3K
C302 0.1
C301 16V33
R301 220
R303 3.3K
R304 3.3K
C108 16V100
C109 0.1
C110 0.1
R108 10K
R107 2.7 (1W)
C107 0.1
C111 0.0056
R103 4.7K
MOTOR
PC
AC
P1
P2
P3
F1
F2
FG
C1
C2
C3
A1
A2
A3
IC101 AN6675
IC201 AN6680
R101 10K
R207 56K
R206 18K
R208 220K
C210 0.22
R209 150K
R210 22K
R211 10K
R215 10K
R216 10K
R214 22K
C212 50V3.3
C211 0.047
C214 16V100
D204
C205 16V10
C201 16V33
C202 16V10
R203 22
R204 220
C204 0.1
R205 47K
C203 16V10
C206 50V1
C215 0.01
R201 330
R202 5.6K
C213 220P
Q201
R213 820
D201
R212 120
Q202
X201
C207 100P
C208 39P
C209 16V47
D202
D203
S201
S202
33r.p.m
45r.p.m
R104 47K
C112 25V4.7
C106 0.1
C105 0.1
R106 15
C104 0.1
R105 10K
R102 4.7(1W)
C103 16V33
C102 16V33
C101 16V33
D202, 203 SVDLN21RP
D204 MA150
Q201 2SD636
Q202 2SD636
D201 SVDGD4205ALC
CONTROL CIRCUIT
DRIVE CIRCUIT

Notes:
1. **S1 :** Stop switch in "**OFF**" position.
2. **S2 :** Power switch in "**OFF**" position.
3. **S3 :** Power selector switch in "**220～240V**" position.
4. **S4 :** Arm switch in "**OFF**" position.
5. **S201 :** Speed select switch (45 r.p.m.) in "**OFF**" position.
   S202 : Speed select switch (33 r.p.m.) in "**OFF**" position.
6. The voltage values are those measured on DC Voltmeter at 33-1/3 r.p.m. For the voltage and waveform at each IC pin, refer to page.
7. To represent transistors, Q is used instead of TR. (Ex. TR1⟶Q1)

Printed Circuit Board

▨ ⊕ B Line
🟩 Earth (Ground) Lines


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
POWER SWITCH
S2
SKYBLU
YEL
WHT
BRN
BLU
S3
110–120V
220–240V
F1 T125mA
F2 T400mA
T1
POWER TRANSFORMER
AC LINE
50/60Hz
D1
SVDS1RBA20
IC1
SVIUPC14312
D201
SVDGD4205ALC
STOP SWITCH
S1
Q1
2SB642
Q202
2SD636
D202, 203
SVDLN21RP
S202
S201
33r.p.m
45r.p.m
SPEED SELECT SWITCH
IC301
SV1UPC4558
Q201
2SD636
IC101
IC201
X201
FG
RLY 1
ARM SW S4
GRY
ORG
BLK
RED
D2
MA150
D204
MA150
DRIVE & CONTROL CIRCUIT BOARD
IC201
AN6680
IC101
AN6675
Technics
EYPC 94HB
SFDPQ20-01

Q1 2SB642

E	33 V
C	0 V

Q202 2SD636

E	0 V
C	6 V
B	0.12 V

Q201 2SD636

E	9 V
C	12 V
B	9.6 V

IC301 SV1UPC4558

①	4.8 V
②	4.8 V
③	4.8 V
④	0 V
⑧	9 V

IC201 AN6680

①	2.2V	⑦	0 V	⑬	5 V	⑲	6.5V
②	2 V	⑧	0 V	⑭	2.7V	⑳	0.4V
③	2 V	⑨	9.6V	⑮	5 V	㉑	1.6V
④	1.8V	⑩	9 V	⑯	5 V	㉒	2.8V
⑤	2.5V	⑪	0.12V	⑰	4.8V	㉓	2.8V
⑥	3.3V	⑫	0 V	⑱	0 V	㉔	2.8V

IC101 AN6675

①	5.6V	⑦	0 V	⑬	7 V	⑲	12V
②	5.6V	⑧	4.2V	⑭	6.8V	⑳	12V
③	0 V	⑨	0 V	⑮	7 V	㉑	12V
④	2.6V	⑩	6.8V	⑯	0 V	㉒	1.6V
⑤	4.8V	⑪	7 V	⑰	7 V	㉓	12V
⑥	5 V	⑫	6.8V	⑱	12 V	㉔	5.6V

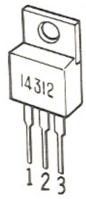
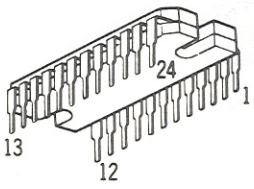
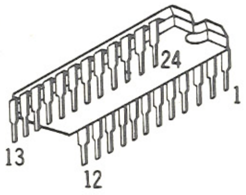
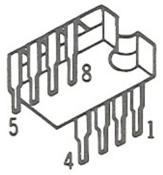
■ REPLACEMENT PARTS LIST (Electrical)

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. ⚠ indicates that only parts specified by the manufacture be used for safety.
3. SL-Q3(XA) ⟶ [XA], SL-Q3(XAL) ⟶ [XAL]
SL-Q3(XGE) ⟶ [XGE], SL-Q3(E) ⟶ [E]
SL-Q3(XG) ⟶ [XG], SL-Q3(XGF) ⟶ [XGF]
SL-Q3(XGB) ⟶ [XGB], SL-Q3K(E) ⟶ [KE]
SL-Q3K(XG) ⟶ [KXG]

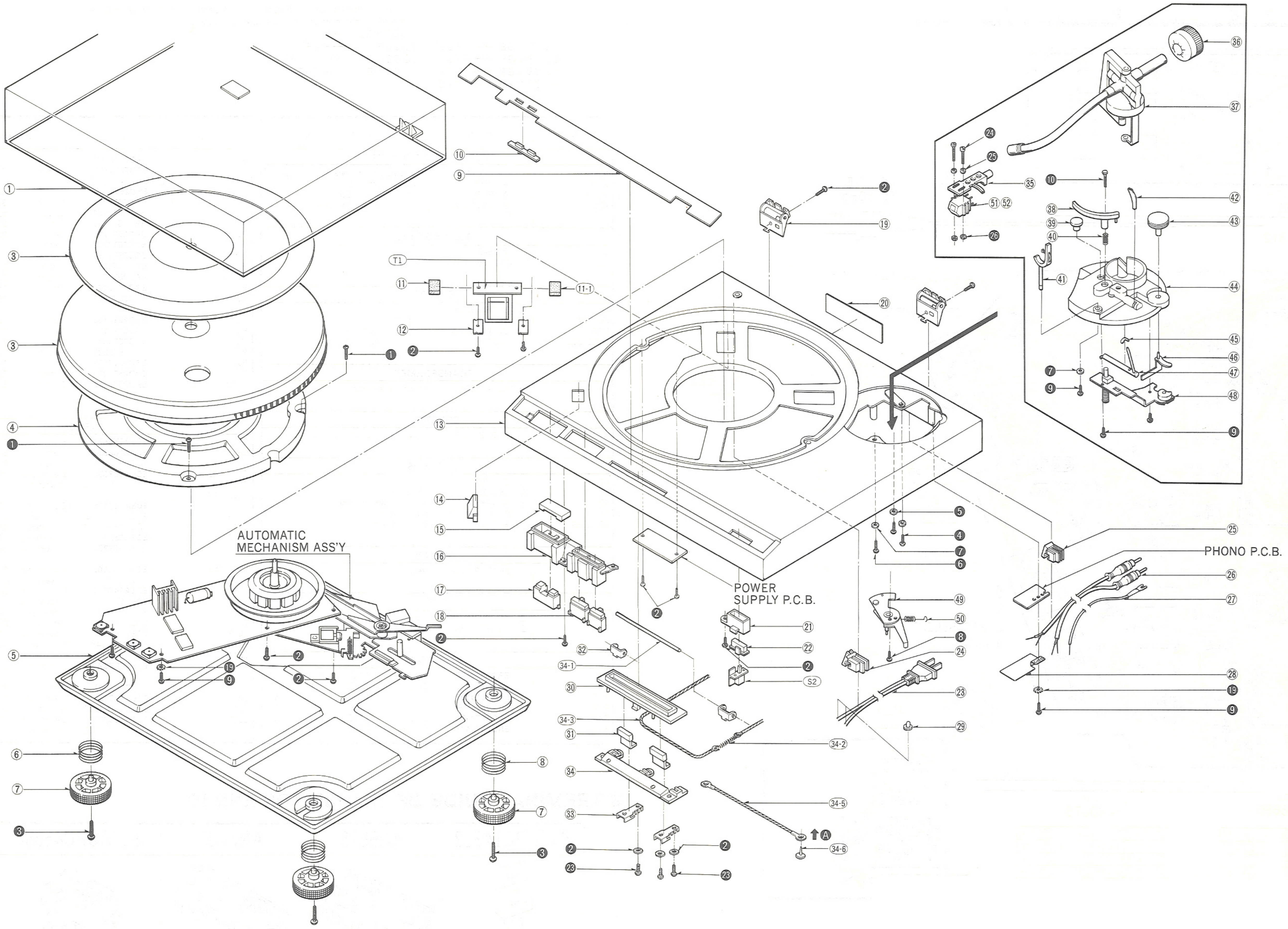
Ref. No.		Part No.	Part Name & Description
		INTEGRATED CIRCUITS	
IC1		SVIUPC14312	Integrated Circuit (Reference Voltage)
IC101		AN6675	Integrated Circuit (Drive)
IC201		AN6680	Integrated Circuit (Control)
IC301		SVIUPC4558C	Integrated Circuit (Control)
		TRANSISTORS	
Q1		2SB642	Transistor
Q201, 202		2SD636	Transistor
		DIODES	
D1	⚠	SVDS1RBA20	Rectifier
D2, 204		MA150	Diode
D201		SVDGD4205ALC	Light Emitting Diode
D202, 203		LN21RP	Light Emitting Diode
		TRANSFORMER	
T1	⚠	SLT41D27E	Power Transformer
		CRYSTAL	
X201		SVQU306115	Crystal, 4. 19328MHz Oscillator
		SWITCHES	
S1		EVQP5R04K	Switch, Stop
S2	⚠	ESB6237	Switch, Power
S3	⚠	SFDSHXW13312	Switch, Power Selector
S4		SFDSAH74403	Switch, Arm
S201, 202		EVQP5R04K	Switch, Select
		RELAY	
RLY1		SFDZQ20-01A	Relay
		FUSE	
F1	⚠	XBA2C012TRO	Fuse, T125 mA
F2	⚠	XBA2C04TRO	Fuse, T400 mA
		RESISTORS	
R1		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R2		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R101		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R102	⚠	ERX1ANJ4R7	Metallic, 4.7Ω, 1W, ± 5%
R103		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R104		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%

Ref. No.		Part No.	Part Name & Description
R105		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R106		**ERD25TJ150**	Carbon, 15Ω, 1/4W, ± 5%
R107	⚠	ERX1ANJ2R7	Metallic, 2.7Ω, 1W, ± 5%
R108		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R201		**ERD25TJ331**	Carbon, 330Ω, 1/4W, ± 5%
R202		**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R203		**ERD25TJ220**	Carbon, 22Ω, 1/4W, ± 5%
R204		**ERD25TJ221**	Carbon, 220Ω, 1/4W, ± 5%
R205		**ERD25TJ822**	Carbon, 8.2kΩ, 1/4W, ± 5%
R206		**ERD25TJ183**	Carbon, 18kΩ, 1/4W, ± 5%
R207		**ERD25TJ563**	Carbon, 56kΩ, 1/4W, ± 5%
R208		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ± 5%
R209		**ERD25TJ154**	Carbon, 150kΩ, 1/4W, ± 5%
R210		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R211		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R212		**ERD25TJ121**	Carbon, 120Ω, 1/4W, ± 5%
R213		**ERD25TJ821**	Carbon, 820Ω, 1/4W, ± 5%
R214		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R215, 216		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R301		**ERD25TJ221**	Carbon, 220Ω, 1/4W, ± 5%
R302, 303, 304		**ERD25TJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
		CAPACITORS	
C1		**ECEB1HS471**	Electrolytic, 470μF, 50V
C3		**ECEA1CS330**	Electrolytic, 33μF, 16V
C4	⚠	ECQM1H153KZ	Polyester, 0.015μF, 50V. ±10%
C101, 102, 103		**ECEA1CS330**	Electrolytic, 33μF, 16V
C104, 105 106, 107		ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C108		**ECEA1ES101**	Electrolytic, 100μF, 25V
C109, 110		ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C111		ECQM1H562KZ	Polyester, 0.0056μF, 50V, ±10%
C112		**ECEA25Z4R7**	Electrolytic, 4.7μF, 25V
C201		**ECEA1CS330**	Electrolytic, 33μF, 16V
C202, 203		**ECEA1HS100**	Electrolytic, 10μF, 25V
C204		ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C205		**ECEA1AS221**	Electrolytic, 220μF, 25V
C206		**ECEA50Z1**	Electrolytic, 1μF, 50V
C207		ECCD1H101K	Ceramic, 100pF, 50V, ±10%
C208		ECCD1H390K	Ceramic, 39pF, 50V, ±10%
C209		**ECEA1ES470**	Electrolytic, 47μF, 25V
C210		ECQM1H224KZ	Polyester, 0.22μF, 50V, ±10%
C211		ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%
C212		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V,
C213		ECCD1H221K	Ceramic, 220pF, 50V, ±10%
C214		**ECEA1ES101**	Electrolytic, 100μF, 25V
C215		ECQM1H103KZ	Polyester, 0.01μF, 50V, ±10%
C301		**ECEA1CS330**	Electrolytic, 33μF, 16V
C302		ECQM1H104KZ	Polyester, 0.1μF 50V, +10%

■ TERMINAL GUIDE OF TRANSISTOR AND IC

SVIUPC14312	AN6675	AN6680	SVIAUPC4558C
			

■ EXPLODED VIEWS (CABINET and CHASSIS)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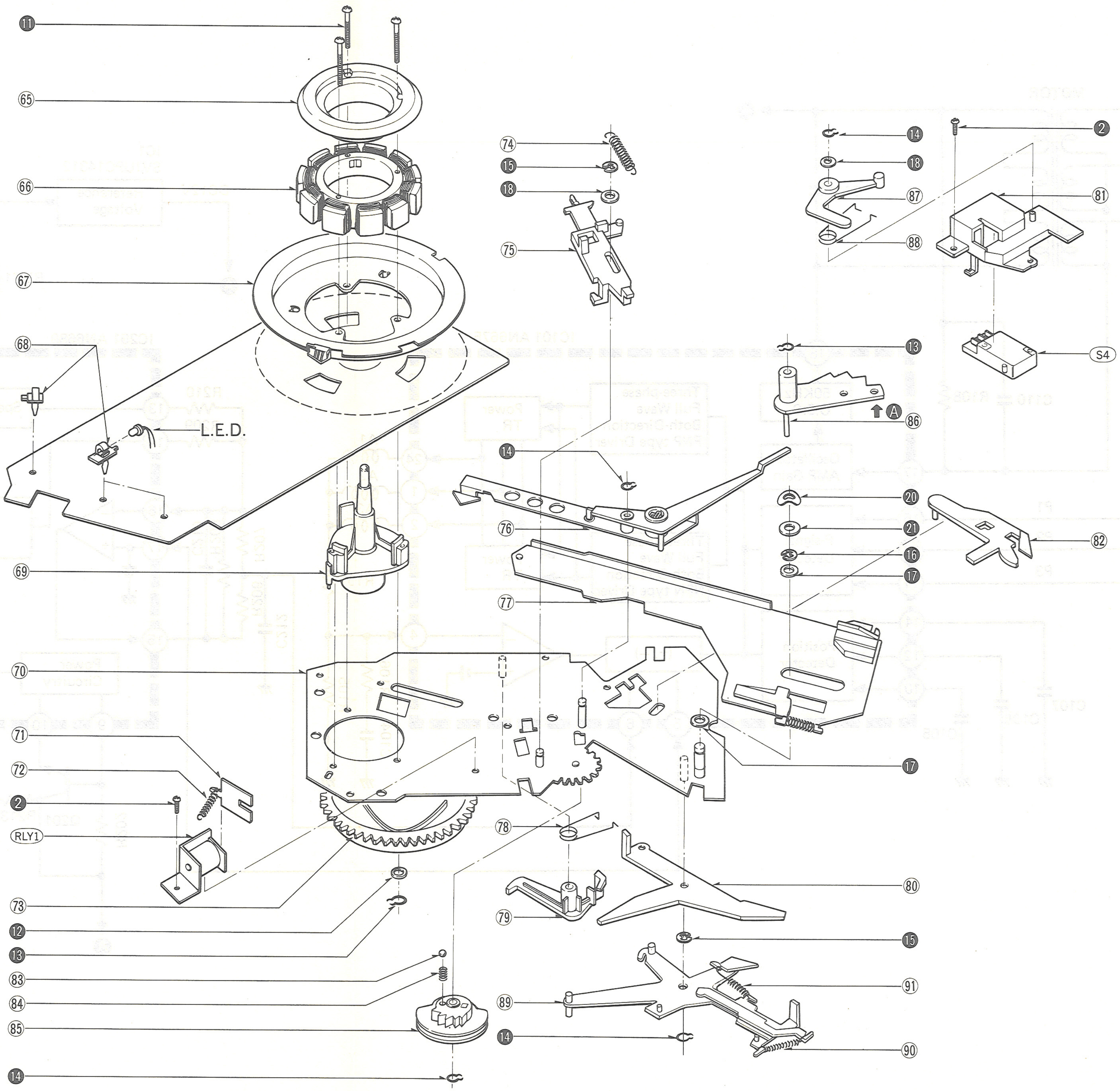
■ REPLACEMENT PARTS LIST (Mechanical)

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. ⚠ indicates that only parts specified by the manufacture be used for safety.
3. SL-Q3(XA) ⟶ [XA], SL-Q3(XAL) ⟶ [XAL]
SL-Q3(XGE) ⟶ [XGE], SL-Q3(E) ⟶ [E]
SL-Q3(XG) ⟶ [XG], SL-Q3(XGF) ⟶ [XGF]
SL-Q3(XGB) ⟶ [XGB], SL-Q3K(E) ⟶ [KE]
SL-Q3K(XG) ⟶ [KXG]

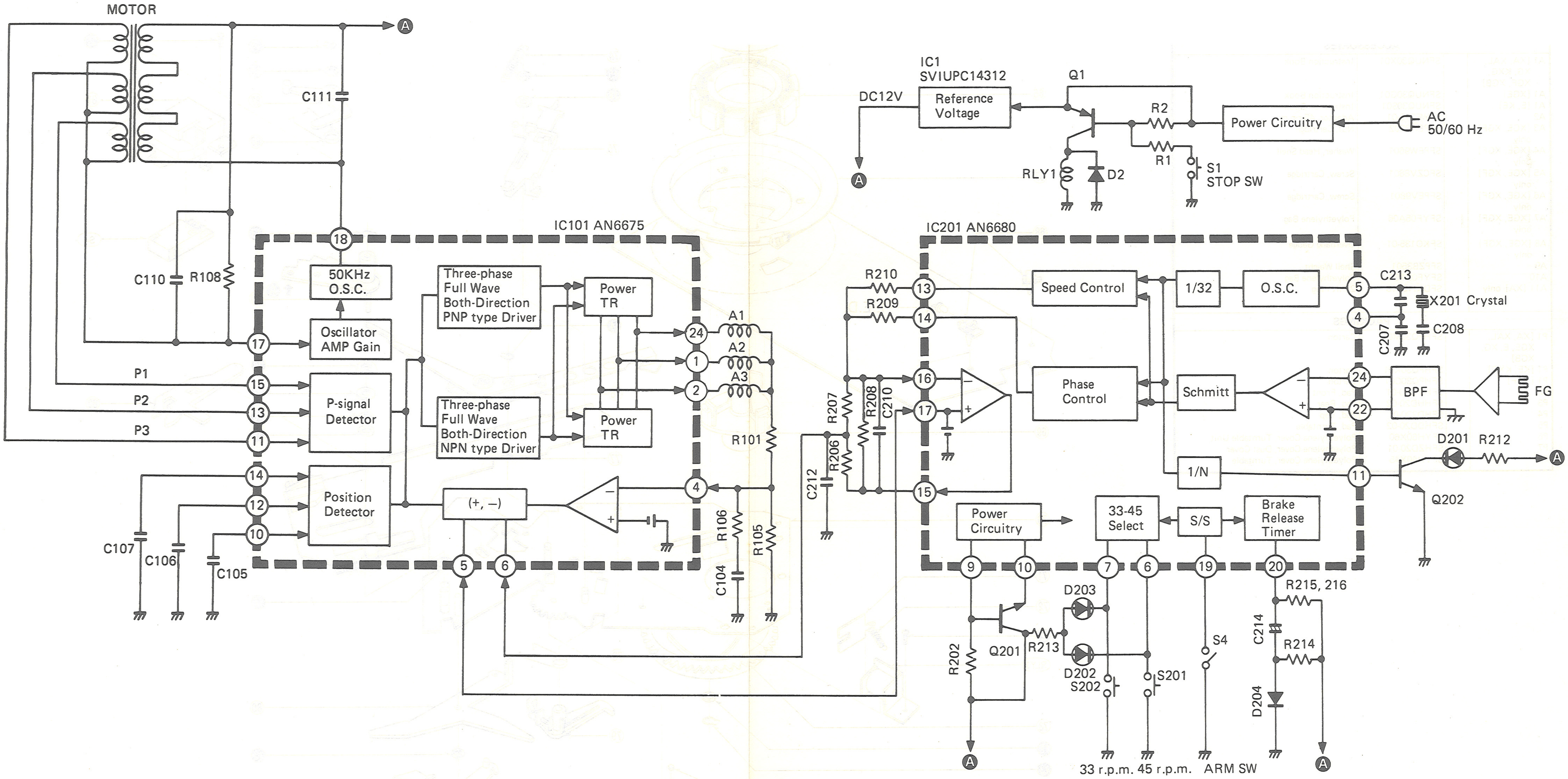
Ref. No.		Part No.	Part Name & Description
		CABINET and CHASSIS PARTS	
1		SFADQ20-01E	Dust Cover
2		SFTG320-01	Turntable Mat
3 [XA, XAL, XGE, E, XG, XGF, XGB]		SFTEQ20-01A	Turntable
3 [KE, KXG]		SFTEQ20P01A	Turntable
4		SFUMQ20-06	Cover, Turntable
5		SFAUQ20-01	Bottom Board
6		SFQC200-02	Spring, Audio Insulator (Front)
7		SFGAQ20-01E	Audio Insulator
8		SFQC320-01	Spring, Audio Insulator (Rear)
9		SFKKQ30-01	Panel
10		SFKKQ20-02	Supporter, Pitch Control
11		SFGCQ20-01	Cushion, Power Transformer (A)
11-1		SFGCQ20X01	Cushion, Power Transformer (B)
12		SFUPQ20-01	Supporter, Power Transformer
13 [XA, XAL, XGE, E, XG, XGF, XGB]		SFACQ30-01	Cabinet (Silver)
13 [KE, KXG]		SFACQ30P01	Cabinet (Black)
14		SFUMQ20-05	Cover, Neon
15		SFKTQ20-01	Knob, Stop SW
16		SFUMQ20-01	Supporter, Stop SW & Pitch Control
17		SFKTQ20-04	Supporter, Stop SW
18		SFKTQ20-02	Knob, Pitch Control
19		SFATQ20-01A	Hinge
20 [XA, XG, KXG, XGF, XGB]		SFNNQ30X01	Name Plate
20 [XAL, XGE]		SFNNQ30G01	Name Plate
20 [E, KE]		SFNNQ30S01	Name Plate
21		SFUMQ20-02	Supporter, Power SW
22		SFKTQ20-03	Knob, Power SW
23 [XA, E, KE, XG, KXG, XGF, XGB]	⚠	RJA23ZC-K	AC Cord
23 [XAL]	⚠	QFC1208M	AC Cord
23 [XGE]	⚠	RJA45ZC-K	AC Cord
24 [XA, XGE, E, KE, XG, KXG, XGF, XGB]		SFUMQ20-04	Clamper, AC Cord
24 [XAL]		SFUMQ20-03	Clamper, AC Cord
25		SFUMQ20-04	Clamper, Phono Cord
26		SFDH212-01	Phono Cord
27		SFEL028-01E	Ground Wire
28		SFUPQ20-07	Plate, Shield
30		SFUMQ30-01	Spacer, Repeat Knob
31		SFKTQ30-01	Knob, Repeat & Size
32		SFUPQ30-03	Supporter, Repeat Knob
33		SFUPQ30-04	Supporter, Repeat
34		SFUMQ30-02E	Bracket, Repeat Knob Spacer
34-1		SFXJQ30-02	Rod, Bracket
34-2		SFQHQ30-12	Spring, Repeat Cord
34-3		SFUZQ30-02E	Cord, Repeat
34-4		SFQPQ30-01	Spacer, Size Cord
34-5		SFUZQ30-01E	Cord, Size
34-6		SFUZQ30-04	Spacer, Size Cord
		TONE ARM and ARM BASE	
35		SFPCC31001K	Head Shell
36		SFPWG51101K	Balance Weight
37 [XA, XAL, XGE, E, XG, XGF, XGB]		SFPAM51101K	Tone Arm (Silver)
37 [KE, KXG]		SFPAM51102K	Tone Arm (Black)
38		SFPRT51001K	Lift Ass'y
39 [XA, XAL, XGE, E, XG, XGF, XGB]		SFGK132-01	Cap, Rubber (Silver)
39 [KE, KXG]		SFGK133S01	Cap, Rubber (Black)
40		SFQA829-03	Spring, Lift Ass'y
41		SFKU212-01E	Arm Rest
42		SFPAB13202	Knob, Arm Lift
43		SFPJK13101	Knob, Anti-skate Force Control
44 [XA, XAL, XGE, E, XG, XGF, XGB]		SFKPQ20-01	Arm Base (Silver)
44 [KE, KXG]		SFKPQ20P01	Arm Base (Black)
45		SFPGM13204	Supporter, Arm Lift
46		SFXJQ20-03E	Plate, Anti-skate Force Control
47		SFPJL00101K	Lever Cueing
48		SFUPQ20-02A	Bracket, Lift Ass'y
49		SFUPQ20-03A	Tone Arm Fixing Plate Ass'y
50		SFPSP00101	Spring, Anti-skate Force Control
51 [exept XGE, XGF]		EPC207CK	Cartridge
52 [exept XGE, XGF]		EPS207ED	Stylus
		AUTOMATIC MECHANISM ASS'Y	
65		SFMGQ20-01	Cover, Stater Frame Ass'y
66		SFMG520-31A	Stater Frame
67		SFMZQ20-06E	FG Detector Coil Ass'y
68		SFUMQ20-09	Spacer, LED
69		SFMZQ20-01A	Shaft, State Frame Ass'y
70		SFUKQ30-11E	Plate, Automatic Mechanism
71		SFUPQ20-11	Supporter, Relay
72		SFQHQ20-11	Spring, Supporter
73		SFUG190-22E	Main Gear Ass'y
74		SFQHQ20-12	Spring, Stop SW Plate
75		SFUMQ30-14E	Plate, Stop SW
76		SFUCQ20-11E	Actuating Plate Ass'y
77		SFUBQ30-11A	Operating Plate Ass'y
78		SFQS222-11	Spring, Supporter
79		SFUM222-11	Supporter, Gear Setting
80		SFUMQ20-17	Lever, Switch
81		SFUMQ30-18	Cover, Switch
82		SFUMQ30-01E	Supporter, Switch
83		SFYB5-32	Ball, Repeat Cam
84		SFQA130-11	Spring, Repeat Cam
85		SFUMQ30-13	Cam, Repeat
86		SFUMQ30-12	Index Plate
87		SFUMQ20-19	Plate, Brake
88		SFQSQ20-13	Spring, Brake Plate
89		SFUMQ30-11E	Plate, Searching Ass'y
90		SFQHQ30-13	Spring, Searching Plate
91		SFQHQ30-14	Spring, Searching Plate
		SCREWS, WASHERS and CIRCLIPS	
❶		**XTV3+8BFZ**	Screw
❷		**XTV3+8BFN**	Screw
❸		SFXGQ20-01	Screw
❹		**XSN3+12S**	Screw
❺		**XWA3B**	Washer
❻		**XTS3+10BFZ**	Screw
❼		**XWG3FZ**	Washer
❽		SFPEV13204	Screw
❾		**XTV3+10BFN**	Screw
❿		SFXG829-1	Screw
⓫		SFXGQ20-02	Screw
⓬		SFXW890B01	Washer
⓭		**XUB6FY**	Circlip
⓮		**XUB4FY**	Circlip
⓯		**XUC3FT**	Circlip
⓰		**XUC5FT**	Circlip
⓱		SFXW130-13	Washer
⓲		**XWE4A10BW**	Washer
⓳		**XYE3+EJ10**	Screw
⓴		SFPEW13005	Washer

Ref. No.		Part No.	Part Name & Description
㉑		SFXW230-11	Washer
㉒		**XSN3+8S**	Screw
㉓		**XSN3+6S**	Screw
㉔ [exept XGE, XGF]		SFCZV8801	Screw
㉕ [exept XGE, XGF]		SFPEW9601	Washer
㉖ [exept XGE, XGF]		SFPEN3302	Nut
ACCESSORIES			
A1 [XA, XAL, XG, KXG, XGF, XGB]		SFNUQ30X01	Instruction Book
A1 [XGE]		SFNUQ30G01	Instruction Book
A1 [E, KE]		SFNUQ30S01	Instruction Book
A2		SFWE212-01	Adaptor, 45 r.p.m.
A3 [XGE, XGF] only		SFPEN3302	Nut, Cartridge
A4 [XGE, XGF] only		SFPEW9601	Washer, Head Shell
A5 [XGE, XGF] only		SFCZV8801	Screw, Cartridge
A6 [XGE, XGF] only		SFPEV9801	Screw, Cartridge
A7 [XGE, XGF] only		SFYF05A06	Polyethylene Bag
A8 [XGE, XGF] only		SFKO135-01	Overhang Gauge
A9		SFPZB3501	Shell Weight
A10		SFYF05A06	Polyethylene Bag
A11 [XA] only		SFDKI19118	2-PIN Plug
PACKINGS			
P1 [XA, XAL, XGE, E, XG, XGB]		SFHPQ30M01	Carton
P1 [KE, KXG]		SFHPQ30K01	Carton
P1 [XGF]		SFHPQ30C01	Carton
P2		SFHHD20-01	Pad, Front
P3		SFHHD20-02	Pad, Rear
P4		SFHD230-01	Pad, Top
P5		SFHDD20-02	Pad, Turntable
P6		SFYH60X60	Polyethylene Cover, Turntable Unit
P7		SFHZD20-01	Polyethylene Cover, Dust Cover
P8		SFYH40X45	Polyethylene Cover, Turntable

■ EXPLODED VIEWS (AUTOMATIC MECHANISM ASS'Y)



■ BLOCK DIAGRAM


MOTOR
Ⓐ
C111
C110
R108
P1
P2
P3
C107
C106
C105
IC101 AN6675
18
50KHz O.S.C.
Oscillator AMP Gain
17
15
13
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12
10
P-signal Detector
Position Detector
Three-phase Full Wave Both-Direction PNP type Driver
Three-phase Full Wave Both-Direction NPN type Driver
Power TR
Power TR
(+, –)
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A1
A2
A3
R101
R106
R105
C104
IC1
SVIUPC14312
DC12V
Reference Voltage
Q1
R2
R1
RLY1
D2
S1 STOP SW
Power Circuitry
AC 50/60 Hz
IC201 AN6680
R210
R209
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R208
C210
R206
C212
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Speed Control
1/32
O.S.C.
Phase Control
Schmitt
BPF
FG
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C213
X201 Crystal
C207
C208
1/N
D201
R212
Q202
Power Circuitry
33-45 Select
S/S
Brake Release Timer
9
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D203
D202
Q201
R213
R202
S202
S201
S4
R215, 216
C214
R214
D204
33 r.p.m.
45 r.p.m.
ARM SW

Printed in Japan
79067800Ⓐ S.H.

ORDER NO. SD8110208IS4

Service Manual

Supplement

Turntable System

SL-Q3

[ES], [XFE]

SL-Q3K

[FEE]

Areas

- * [ES] is available in European Militaly.
- * [XFE] is available in far East PX.
- * [FEE] is available in European Audio Club.

The circuit has been partially changed for the purpose of improvement. Accordingly, the Supplement Service Manual is issued, containing the schematic diagram, printed circuit board wiring view, and electrical parts list for after-change use.

Notes:

- * This supplement service manual includes on the changes of the **SL-Q3/SL-Q3K** service manual (ORDER NO. SD7906-1578 and ORDER NO. SD7906-1579).
- * This supplement service manual should be filed with the service manual for model **SL-Q3/SL-Q3K** (ORDER NO. SD7906-1578 and ORDER NO. SD7906-1579).
- * When servicing model **SL-Q3/SL-Q3K** this supplement service manual should be used together.

Technics

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
1-2, 1-chome, Shibakoen, Minato-ku, Tokyo 105 Japan

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

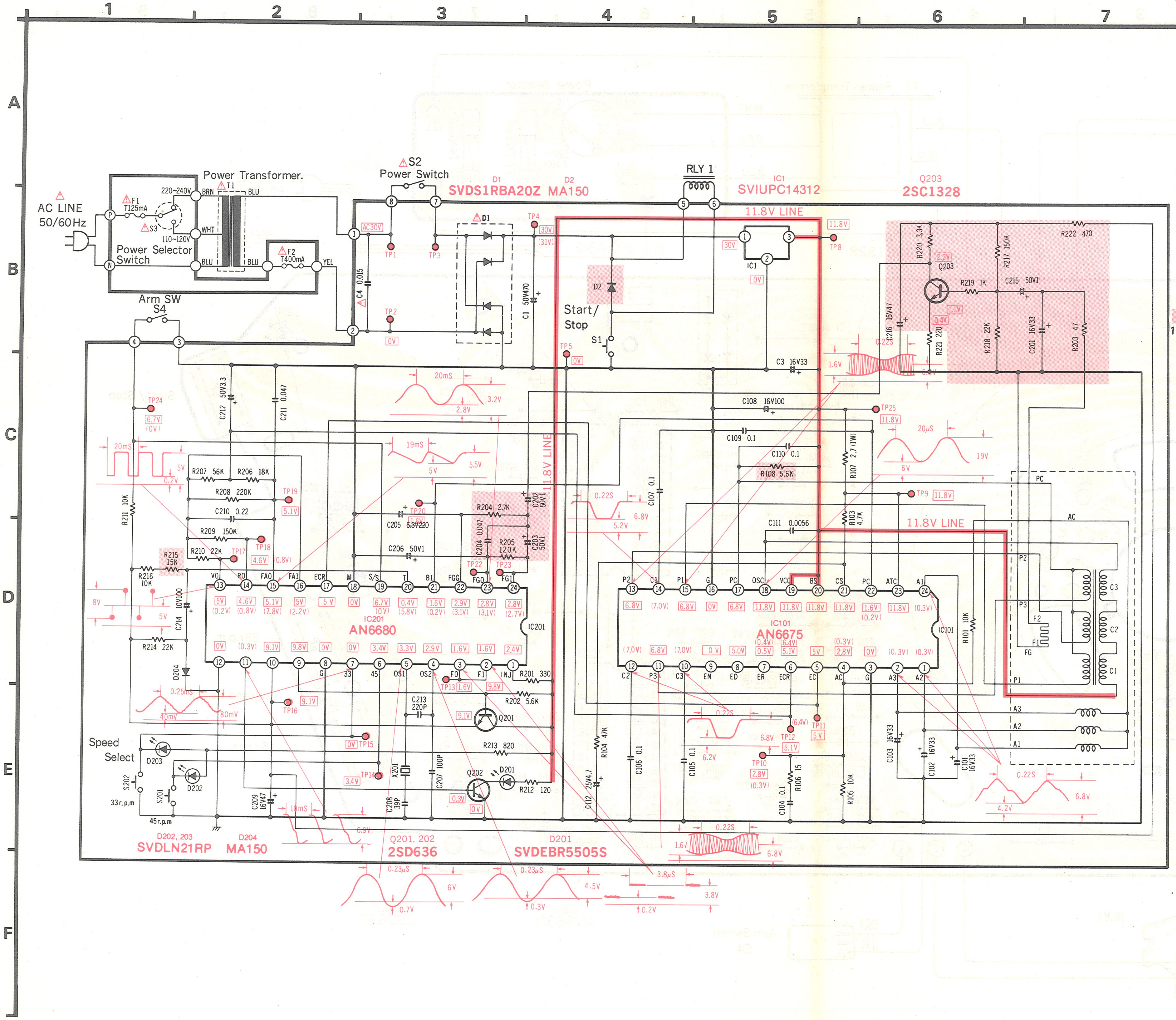
CHANGES

■ REPLACEMENT PARTS LIST…Electrical Parts

Notes: 1. Part number are indicated on most mechanical parts.
Please use this part number for parts orders.
2. ⚠ indicates that only parts specified by the manufacture be used for safety.

Ref. No.		Change of Part No.		Part Name & Description
		SL-Q3 (OLD) ➡	SL-Q3 (NEW)	
INTEGRATED CIRCUITS				
IC1		SVIUPC14312		Integrated Circuit (Referance Voltage)
IC101		AN6675		Integrated Circuit (Drive)
IC201		AN6680		Integrated Circuit (Control)
IC301		SVIUPC4558C	Deletion	
TRANSISTORS				
Q1		2SB642	Deletion	
Q201, 202		2SD636		Transistor
Q203		Addition	**2SC1328–T**	Transistor
DIODES				
D1	⚠	SVDS1RBA20	SVDS1RBA20Z	Rectifier
D2, 204		MA150	**MA162A**	Diode
D201		SVDGD4205ALC	SVDEBR5505S	Light Emitting Diode
D202, 203		SVDLN21RP	**LN21RP**	Light Emitting Diode
TRANSFORMER				
T1	⚠	SLT41D27E	SLT41D27F	Power Transformer
CRYSTAL				
X201		SVQU306115		Crystal 4.19328MHz Osillator
SWITCHES				
S1		EVQP5R04K		Switch, Stop
S2	⚠	EBS6237		Switch, Power
S3	⚠	SFDSHXW13312		Switch, Power Selector
S4		SFDSAH74403		Switch, Arm
S201, 202		EVQP5R04K		Switch, Speed Select
RELAY				
RLY1		SFDZQ20–03A		Plunger
FUSE				
F1	⚠	XBA2C012TR0		Fuse, T120mA
F2	⚠	XBA2C04TR0		Fuse, T400mA
CAPACITORS				
C1		**ECEB1HS471**		Electrolytic, 470μF, 50V
C3		**ECEA1CS330**		Electrolytic, 33μF, 16V
C4	⚠	ECQM1H153KZ		Polyester, 0.015μF, 50V, ± 10%
C101～103		**ECEA1CS330**		Electrolytic, 33μF, 16V
C104～107		ECQM1H104KZ		Polyester, 0.1μF, 50V, ± 10%
C108		**ECEA1ES101**		Electrolytic, 100μF, 25V
C109, 110		ECQM1H104KZ		Polyester, 0.1μF, 50V, ± 10%
C111		ECQM1H562KZ		Polyester, 0.0056μF, 50V, ± 10%
C112		**ECEA25Z4R7**		Electrolytic, 4.7μF, 25V
C201		**ECEA1CS330**		Electrolytic, 33μF, 16V
C202, 203		ECEA1HS100	**ECEA50Z1**	Electrolytic, 1μF, 50V
C204		ECQM1H104KZ	ECQM1H473KZ	Polyester, 0.047μF, 50V, ± 10%
C205		**ECEA1AS221**		Electrolytic, 220μF, 10V
C206		**ECEA50Z1**		Electrolytic, 1μF, 50V
C207		ECCD1H101K		Ceramic, 100pF, 50V, ± 10%
C208		ECCD1H390K		Ceramic, 39pF, 50V, ± 10%
C209		**ECEA1ES470**		Electrolytic, 47μF, 25V
C210		ECQM1H224KZ		Polyester, 0.22μF, 50V, ± 10%
C211		ECQM1H473KZ		Polyester, 0.047μF, 50V, ± 10%
C212		**ECEA50Z3R3**		Electrolytic, 3.3μF, 50V
C213		ECCD1H221K		Ceramic, 220pF, 50V, ± 10%
C214		ECEA1ES101	**ECEA1AS101**	Electrolytic, 100μF, 10V
C215		ECQM1H103KZ	**ECEA50Z1**	Electrolytic, 1μF, 50V
C216		Addition	**ECEA1ES470**	Electrolytic, 47μF, 25V
C301		ECEA1CS330	Deletion	
C302		ECQM1H104KZ	Deletion	
RESISTORS				
R1		ERD25TJ473	Deletion	
R2		ERD25TJ223	Deletion	
R101		ERD25TJ103	**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R102		ERX1ANJ4R7	Deletion	
R103		ERD25TJ472	**ERD25FJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R104		**ERD25TJ473**		Carbon, 47kΩ, 1/4W, ± 5%
R105		ERD25TJ103	**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R106		ERD25TJ150	**ERD25FJ150**	Carbon, 15Ω, 1/4W, ± 5%
R107		**ERX1ANJ2R7**		Metallic, 2.7Ω, 1W, ± 5%
R108		ERD25TJ103	**ERD25FJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R201		ERD25TJ331	**ERD25FJ331**	Carbon, 330Ω, 1/4W, ± 5%
R202		ERD25TJ562	**ERD25FJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R203		ERD25TJ220	**ERD25FJ470**	Carbon, 47Ω, 1/4W, ± 5%
R204		ERD25TJ221	**ERD25FJ272**	Carbon, 2.7kΩ, 1/4W, ± 5%
R205		ERD25TJ822	**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ± 5%
R206		**ERD25TJ183**		Carbon, 18kΩ, 1/4W, ± 5%
R207		**ERD25TJ563**		Carbon, 56kΩ, 1/4W, ± 5%
R208		**ERD25TJ224**		Carbon, 220kΩ, 1/4W, ± 5%
R209		**ERD25TJ154**		Carbon, 150kΩ, 1/4W, ± 5%
R210		**ERD25TJ223**		Carbon, 22kΩ, 1/4W, ± 5%
R211		ERD25TJ103	**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R212		ERD25TJ121	**ERD25FJ121**	Carbon, 120Ω, 1/4W, ± 5%
R213		ERD25TJ821	**ERD25FJ821**	Carbon, 820Ω, 1/4W, ± 5%
R214		**ERD25TJ223**		Carbon, 22kΩ, 1/4W, ± 5%
R215		ERD25TJ103	**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
R216		ERD25TJ103	**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R217		Addition	**ERD25TJ154**	Carbon, 150kΩ, 1/4W, ± 5%
R218		Addition	**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R219		Addition	**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R220		Addition	**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R221		Addition	**ERD25FJ221**	Carbon, 220Ω, 1/4W, ± 5%
R222		Addition	**ERD25FJ471**	Carbon, 470Ω, 1/4W, ± 5%
R301		ERD25TJ221	Deletion	
R302～304		ERD25TJ332	Deletion	

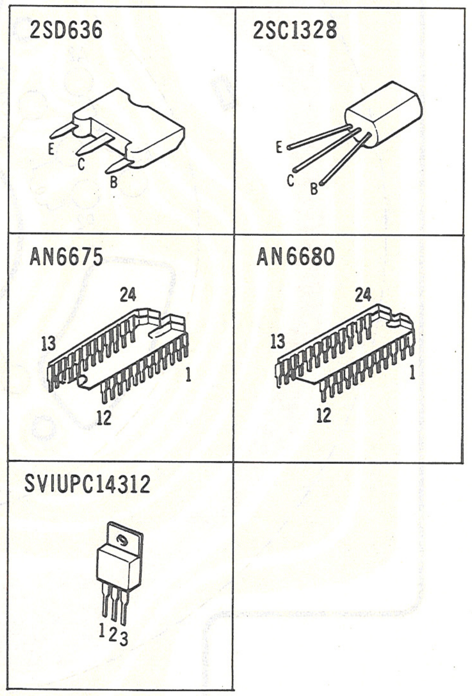
■ SCHEMATIC DIAGRAM (This schematic diagram may be modified at any time with the development of new technology.)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
AC LINE
50/60Hz
F1
T125mA
S3
Power Selector
Switch
220~240V
110~120V
Power Transformer.
T1
BRN
BLU
WHT
YEL
F2
T400mA
C4 0.015
Arm SW
S4
S2
Power Switch
D1
SVDS1RBA20Z
D2
MA150
AC30V
TP1
TP3
TP2
TP4
30V
(31V)
C1 50V470
RLY 1
IC1
SVIUPC14312
11.8V LINE
30V
0V
Q203
2SC1328
11.8V
TP8
R220 3.3K
R217 150K
R222 470
2.2V
R219 1K
C215 50V1
1.1V
0.4V
C216 16V47
R221 220
R218 22K
C201 16V33
R203 47
Start/
Stop
S1
TP5
0V
C3 16V33
1.6V
0.22S
6.8V
TP24
6.7V
(0V)
C212 50V3.3
C211 0.047
20mS
2.8V
3.2V
20mS
5V
0.2V
R207 56K
R206 18K
R208 220K
C210 0.22
R209 150K
R210 22K
TP19
5.1V
TP20
C205 6.3V220
C206 50V1
19mS
5.5V
R204 2.7K
C204 0.047
R205 120K
C202 50V1
C203 50V1
TP22
TP23
11.8V LINE
R211 10K
R215 15K
R216 10K
TP17
TP18
4.6V
(0.8V)
IC201
AN6680
VO
RO
FAO
FAI
ECR
M
S/S
T
B1
FGG
FGO
FG1
C214 10V100
R214 22K
D204
8V
5V
40mV
80mV
0.25mS
TP16
9.1V
C213 220P
R201 330
R202 5.6K
Q201
TP13
1.6V
9.8V
TP15
R213 820
TP14
3.4V
X201
C207 100P
Q202
D201
R212 120
0.3V
0V
C208 39P
C209 16V47
10mS
0.9V
Speed
Select
D203
D202
S202
S201
33r.p.m
45r.p.m
D202, 203
SVDLN21RP
D204
MA150
Q201, 202
2SD636
D201
SVDEBR5505S
0.23µS
6V
0.7V
4.5V
0.3V
3.8µS
3.8V
0.2V
C108 16V100
C109 0.1
C110 0.1
R108 5.6K
C107 0.1
R107 2.7(1W)
0.22S
6.8V
5.2V
TP25
11.8V
20µS
19V
6V
TP9
11.8V
R103 4.7K
C111 0.0056
IC101
AN6675
P2
C1
P1
G
PC
OSC
VCC
BS
CS
ATC
A1
C2
P3
C3
EN
ED
ER
ECR
EC
AC
A3
A2
R101 10K
PC
AC
P2
P3
F2
F1
FG
P1
A3
A2
A1
0.22S
6.8V
6.2V
TP10
2.8V
(0.3V)
TP11
5V
TP12
5.1V
(6.4V)
R104 47K
C106 0.1
C105 0.1
C104 0.1
R106 15
R105 10K
C103 16V33
C102 16V33
C101 16V33
C112 25V4.7
0.22S
4.2V
1.6V

Notes:

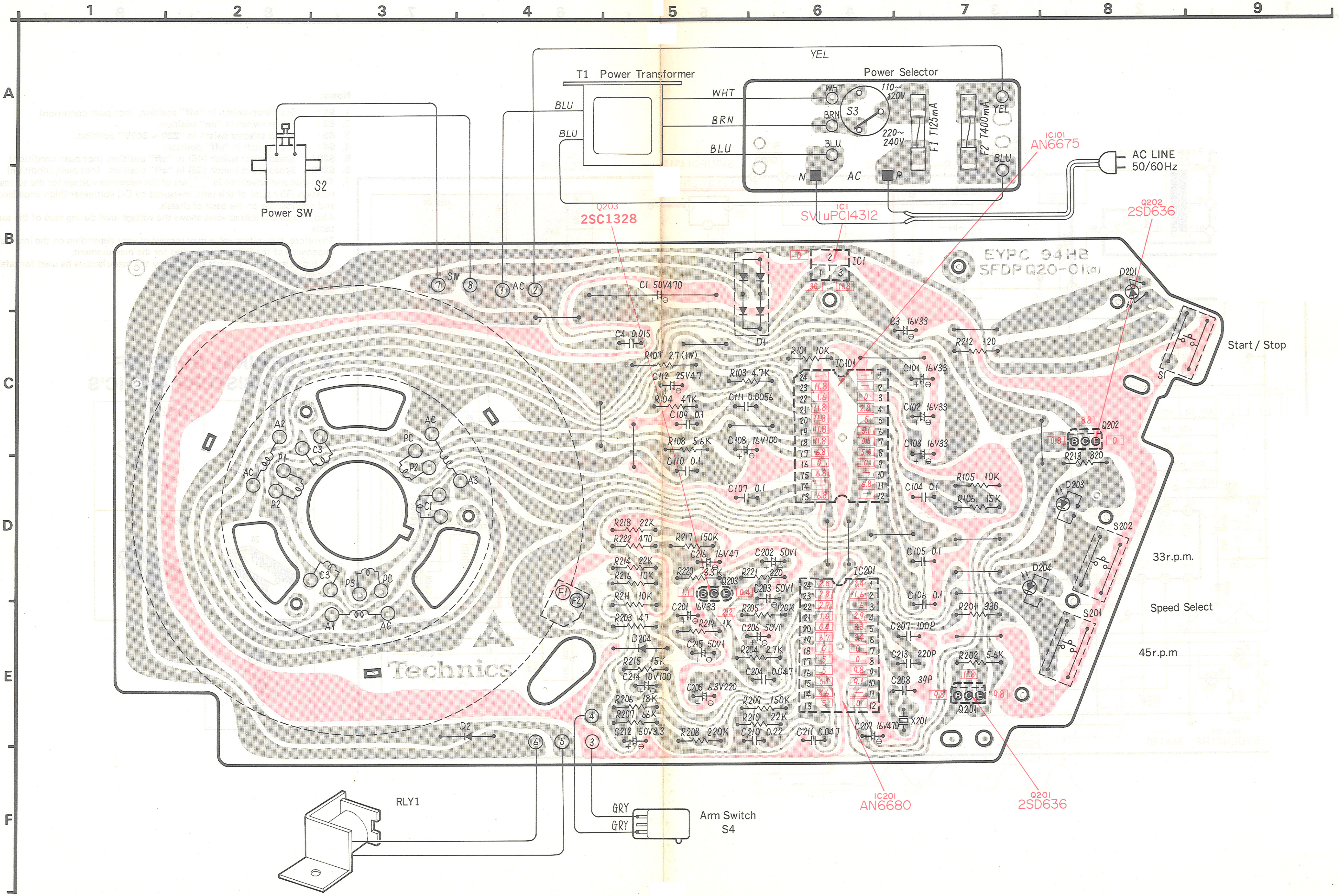
1. **S1** : Start/stop switch in "**off**" position. (not push condition)
2. **S2** : Power switch in "**on**" position.
3. **S3** : Power selector switch in "**220 ~ 240V**" position.
4. **S4** : Arm switch in "**off**" position.
5. **S201** : Speed select switch (45) in "**off**" position. (not push condition)
6. **S202** : Speed select switch (33) in "**off**" position. (not push condition)
7. The value and waveform in ☐ are of the reference voltage for the turntable rotation (33 r.p.m) of this unit, measured by DC voltmeter (high impedance) and oscilloscope on the basis of chassis.
   Also, the parenthesized value shows the voltage level during stop of the turntable.
   Therefore, the voltage value may somewhat vary depending on the internal impedance of the DC voltmeter used for the maesurement.
8. ⚠ indicates that only parts specified by the manufecture be used for safety.
9. The shaded area shows the part changed.
10. 🟥 ⊕B voltage line.

■ TERMINAL GUIDE OF TRANSISTORS AND IC'S


2SD636
E
C
B
2SC1328
E
C
B
AN6675
24
13
12
1
AN6680
24
13
12
1
SVIUPC14312
1
2
3

■ PRINTED CIRCUIT BOARD WIRING VIEW

🟥 Ground (Earth) Lines


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
YEL
T1 Power Transformer
Power Selector
WHT
BRN
BLU
BLU
BLU
WHT
BRN
S3
110~120V
220~240V
BLU
F1 T125mA
F2 T400mA
YEL
BLU
N
AC
P
AC LINE 50/60Hz
S2
Power SW
IC101 AN6675
Q203 2SC1328
IC1 SVI uPC14312
Q202 2SD636
EYPC 94HB
SFDP Q20-01(a)
SW
AC
IC1
D1
D201
C1 50V470
C4 0.015
C3 16V33
R212 120
Start / Stop
S1
R101 10K
R107 27 (1W)
IC101
C101 16V33
C112 25V4.7
R103 4.7K
R104 47K
C111 0.0056
C109 0.1
C102 16V33
R108 5.6K
C108 16V100
C103 16V33
C110 0.1
Q202
R213 820
C107 0.1
C104 0.1
R105 10K
R106 15K
D203
S202
A2
AC
C3
PC
P1
P2
A3
AC
C1
P2
C3
P3
PC
A1
AC
R218 22K
R222 470
R217 150K
R214 22K
C216 16V47
C202 50V1
R216 10K
R220 3.3K
Q203
R221 220
IC201
C105 0.1
33r.p.m.
R211 10K
C203 50V1
D204
C201 16V33
R205 120K
C106 0.1
R203 47
R219 1K
C206 50V1
R201 330
Speed Select
S201
C207 100P
D204
C215 50V1
R204 2.7K
R215 15K
C214 10V100
C204 0.047
C213 220P
R202 5.6K
45r.p.m.
C205 6.3V220
C208 39P
R206 18K
R209 150K
Q201
R207 56K
R210 22K
C209 16V470
X201
C212 50V3.3
R208 220K
C210 0.22
C211 0.047
D2
F1
F2
Technics
RLY1
GRY
GRY
Arm Switch S4
IC201 AN6680
Q201 2SD636

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